

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

You are listening to the Human Upgrade with Dave Asprey, and today I have asked a dear friend back on the show, someone I've worked with for more than seven years, none other than Naveen Jane, who's a philanthropist and entrepreneur and founder of what I call it, biotech and longevity company called Viome. And full disclosure, I am an enthusiastic investor and advisor in Viome. So I spent a lot of time with the company and with Naveen going deep on their tech. This is an AI driven platform that looks at the interaction between your food, your microbiome, and your cells. And they've just been continuously releasing new knowledge about how our bodies work, especially at the system level. I think this is because Naveen started his career out when he was a very young man. He still is a very young man, at least from a sense of humor perspective, but he started out at Microsoft many, many, many years ago.

([00:01:02](#)):

And so he just thinks about it differently. And what I want to share with you today is emerging information or knowledge that we have about the difference between your oral bacteria and your gut bacteria. And for years, if you've been following me, I've been saying don't use mouthwash because it kills nitric oxide forming bacteria. It'll give you erectile dysfunction and it's bad for your vascular system. But it turns out when you really look at the data from half a million people and sequence what's going on in there, there's a whole new world that's not even about your poop. Well, it ultimately comes out in your poop, but it's about your mouth. And I want to go in on that with Naveen. So Naveen, welcome back.

Naveen Jain ([00:01:44](#)):

Well, first of all, game, it's always such a pleasure to speak with you, whether it's on stage or on a podcast, it's always informative, entertaining, and inspiring. So I'm always here to serve the audience because you have such a wonderful, wonderful community and being part of it has just been brings me a tremendous amount of joy.

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

Thanks dve. And if this is the first time you've heard Naveen on the show, we've become good friends. We actually launched the Apollo group together along with our mutual ambition, Lani from Mindvalley. This is a mentorship and membership group that was partly an excuse for Naveen and I to get to spend some quality time together working on other people's business problems. So we'd have something fun to do to get back. If you're interested in that. I don't know me up on dms on Instagram or email or something. I don't dunno. Do we have a URL for the Appell group? It's pretty exclusive. Yeah,

Naveen Jain ([00:02:36](#)):

I'm sure somebody knows that

Dave Asprey ([00:02:38](#)):

You dunno either. I'm not trying to sell it guys, but if like you want high end on mentoring, we're doing that. But we started that really just so we could hang out and do more cross collaboration between the things I'm doing at Upgrade Labs, the things happening at Viome and Naveen, you've just won every entrepreneur award that you could possibly entrepreneur over the year and all kinds of stuff like that. And you've had multiple exits, but I've watched your passion for the last company you were working with before OME versus this one. I think you're more excited about gut bacteria than you are, maybe even things like meteors.

Naveen Jain ([00:03:19](#)):

Honestly, I look at these problems at a decade at a time and to see what is it that I'm willing to dedicate 10, 15 years of my life to solving a problem that if we are successful in solving that problem, would it change the trajectory of how humanity is going to live? And to me, it's not about just because I'm philanthropic and I'm doing all these things. These are fundamentally a capitalist things to do because anytime you can help a billion people live a better life, you automatically get to create a hundred billion dollar company. But you don't wake up in the morning and say, what should I do to create a hundred billion dollar company? Making money is simply a byproduct of doing things that improve people's life. In other words, if I was talking like Dave Espey, I would say making money is like having an orgasm. If you focused on it, you're never going to get it. You just have to enjoy the process.

Dave Asprey ([00:04:17](#)):

Wow, putting words in my mouth. Thanks. So this isn't our podcast about making money. It's a podcast probably about making poop, but doing it because your mouth bacteria work better, which ultimately for volume I think is making money, but it's also improving things.

Naveen Jain ([00:04:32](#)):

Actually, it's really interesting. You see that a lot of the people have this intuitive nature that is my partner going to be a heartbreaker? What if you could analyze the saliva and we could specifically tell you if your partner is going to be a true heartbreaker because as you mentioned at the top of the podcast that your oral microbiome determines your heart health, your vascular health and your sexual health because of the nitric oxide. But that's just one part of it. In fact, being at the top of the digestive tube when you eat food, if you recall, your mother may have told you eat slowly and chew your food. Why was that? It wasn't that she was worried somehow that food was going to get stuck in ESUs. It was primarily about allowing the oral microbiome to mix with the food and actually predigests the food and send the signal to the brain.

([00:05:30](#)):

What kind of food is coming to the digest system is ready for it. That means it pre-process the food. So most of the nutrition can be absorbed in your upper intestine and then it sends a signal to the brain, Hey, there is some glucose or the sweetest stuff coming down. Tell pancreas to start releasing insulin because it is coming down. And what happens is in this modern age, some people decide that they're going to take diet stuff, diet soda, they're going to have these artificial sweeteners without realizing that what actually happens is when you take artificial sweetener, your oral microbiome actually detects that sensor signal to pancreas to release insulin. But for there is nothing for insulin to do and you end up becoming insulin resistance. So the fact you think you're going to be helping yourself by taking diet soda, you actually hurting yourself in terms of doing that. So I think you and I at least agree on few things.

Having a natural sugar, if you're going to eat something sweet, eat fruits and eat natural sugar. There's no reason for you to go with artificial sweetness.

Dave Asprey ([00:06:47](#)):

Now I've seen a few people, usually this is like the angry low carb bodybuilder template. There's a group of these guys online, they're just always kind of insulting each other over whatever the latest low carb thing is and they will just swear up and down that, well, I found a study that says that you should eat all these artificial sweeteners. What have you found with artificial sweeteners and the interaction of the oral microbiome and then the gut bacteria?

Naveen Jain ([00:07:18](#)):

So what there's several things is that obviously the streets, anything you have these artificial sweetener, they basically change the composition and the functionality of oral microbiome. And in fact, it's not that they somehow bind to your animal and cause the tooth decay, what really ends up happening is they change the pH value of the mouth and that's what causes, so it basically makes it more acidic, which is what causes the tooth decay. So it's not the sweet that causes tooth decay, it's the acidity that it converts into the, that changes the whole microbial activities to make it more acidic. That is what causes the tooth decay. And by the way, that continues down as I think the insulin. Once you have lots of insulin in the body and your body becomes insulin resistance, now you have all kinds of metabolic diseases, not just simply a potential to get diabetes.

[\(00:08:17\)](#):

You're looking at obesity, you're looking at the cardiovascular disease including Alzheimer, which is also yet another metabolic disease. So the trick really is how do you get to reduce your insulin resistance or amount of insulin that is being produced in the body? And I think these low carb guys have just completely gotten wrong. And in fact, many people may think that bulletproof diet is somehow this keto low carb or low carb diet, which I think what I've learned from you is actually it's not, you can cycle through it, but you never want to be on low carb or a keto diet for a very long time because it's absolutely ly destroys your body.

Dave Asprey ([00:09:00](#)):

It's really funny. People are, well, Dave, I've seen people say, are you invented keto? I'm like, no, that was Atkins about the year I was born I think. But Robert Atkins and the Atkins diet, and he is very much the guy who at least in modern times said the keto diet has merit, but he would let you use chemical sweeteners and seed oils and soy protein. As long as it wasn't a carb, it was okay. So with all these low carb people, including like me, and when I was maybe 22, I was trying to lose all this weight. So I went on the Atkins diet, I could lose 50 bowels. The other 50 bowels would never go away because my gut biome was wrecked. And because of artificial sweeteners and bad oils and cheap proteins. So the bulletproof diet's like hey, use ketosis as a tool for a week and then have some carbs so you don't wreck your gut bacteria. I just learned this through 10 years of trying to get rid of that other 50 pounds. But

how do you explain the success of people on the carnivore diet? Unquestionably, there are people getting great results.

Naveen Jain ([00:10:03](#)):

Look, you said carnivore diet or you mean the Atkins diet?

Dave Asprey ([00:10:06](#)):

I mean on the carnivore diet. So Atkins diet, we know the problems because you have soy protein and NutraSweet and that was Ster Atkins, right?

Naveen Jain ([00:10:14](#)):

Dr. Atkins died of heart disease, not a great branding for a particular diet. If you ask me, I thought

Dave Asprey ([00:10:20](#)):

He died of a car accident and he had heart disease when he died, wasn't there something like that?

Naveen Jain ([00:10:25](#)):

He may have had heart attack and then had a car accident, but I think he did die of heart.

Dave Asprey ([00:10:29](#)):

It's like one of those covid things.

Naveen Jain ([00:10:31](#)):

But anyway, it's not the carnivore diet. So I think let's just start with the basics here. There is no such thing as universal healthy diet. That means there is no one diet that's good for everyone all the time. So your body is constantly adapting and changing and the people are very different. So there are people when they eat red meat and red meat contains a lot of choline and carnitine, and by the way, your microbiome takes the choline and carnitine turns them into TMA trimethyl Amin, which gets absorbed in the blood that basically liver converts him to TMAO trimethyl amin oxide. Now what happens is many people who are on a cardio or diet, their gut microbiome actually don't make TMA and those people are

absolutely fine because that meat has tremendous amount of nutrition. And if your gut microbiomes are not making N-F-T-M-E, then you should absolutely eat red meat.

[\(00:11:33\)](#):

But if your gut microbiome are taking CHO and carnitine making tons of TME, that is going to be the one that's going to be recipe for potential aha disease. So art sclerosis happens when you have not of high amount of TM AO in your body and in fact your gut microbial activity, we at Y are able to measure your TMA production and tell you when to cut out some of the red meat. Not that you eliminate it, but it's simply to say, Hey, get producing way too much. Let's adjust the things to adjust your gut microbial activities so they produce less TMA. And that's my I think on that is that neither red meat is neither good nor bad. It is good for some people, sometimes it's bad for some people for the same time, but not universally all the time, good or bad for anyone.

Dave Asprey [\(00:12:23\)](#):

Can we go deeper on red meat and talk about this? So I want to be really clear. When I go out to dinner with Naveen, if we ordered and shared a plate, we'd order the steak plate with a side of weird veggies and garbanzos or something. I'd eat the steak, he'd eat the garbanzos. So naveen's vegetarian and if I ate the eds, I would fall over with GI problems. And you're very healthy. I mean we're both healthy. So the personalization is you just have to do what works for you and you're measuring that. But there's two things I hear about red meat. One is the TMAO problem. And guys, if this is something that you say, I've never heard of this every couple of years, big food, which is trying to sell you gruel and peasant food as if it was a health food, they'll come along and attack beef and they'll attack it on environmental grounds. They'll attack it on this TMAO ground. And I've absolutely gone through all the science on TMAO and what it comes down to is what Naveen says, if you have a healthy gut bacteria, you should eat red meat. If you don't have healthy gut bacteria, you need to fix it and then you can eat red meat. And Naveen, fortunately, in fact it's the only way I know of to measure how much of this bacteria do you have. But that same bacteria turns fish into TMAO more than red meat,

Naveen Jain [\(00:13:47\)](#):

100% correct. The lot of the gut, your gut microbiome can convert the fish. So it's not the red meat. In fact, fish can also be the same harmful to you if your gut bacteria is taking fish and converting them into TMAO. So ultimately there's no one who would doubt that if your gut bacteria are unhealthy and you are in dysbiosis and whether it's a fish or red meat, if you are producing a lot of PMA, that is bound to cause you problems. So your job at that point is to actually fix your gut microbial activity. And it's not just about the red meat or fish, it's same thing applies to vegetables. A lot of people will say avocado is a super food, everyone could eat avocado. And if you are a vegetarian or a planter, whatever they call them, you'll never be sick. And without realizing that avocado is very high in uric acid and if your gut microbiome are already making a lot of uric acid, the last thing you want to do is to eat avocado because you're going to actually end up getting gout.

[\(00:14:49\)](#):

And that's what happens. Same thing about broccoli or broccoli or broccoli or brussel sprout or cabbage, that if you really, your gut bacteria are producing lot of sulfide, then you should not be eating broccoli or ca cabbage or brussel sprout because those sulfate are going to end up making additional sulfide

because sulfate in these foods and that sulfide is going to cause a lot more inflammation. And by the way, let's go talk to your favorite things is spinach and kale. Everyone thinks I am a planter, I eat lot of salad, it's got to be healthy. The Popeye told us all that eat is spinach be everyone could take a spinach and build body without realizing a spinach has probably one of the highest quantity of oxalate in the food content, right? And that oxalates, if you gut microbes are not able to metabolize or digest, you are going to end up getting a kidney stone or worse, right?

[\(00:15:53\)](#):

So the problem is none of these foods are good or bad. You have to know what these foods are doing. Think of these foods as simply the set of substrate or ingredients that are inside the food, how your oral microbiome actually processes these substrate. How does your gut microbiome process these substrate? What biochemical activities actually going to happen and how does your immune system and your cells respond to the biochemical activities that are happening? Is really the key to understanding whether you're going to have inflammation in your gut, inflammation in your mouth, or whether you are going to have inflammation in your body. Because when you have many of these gut microbial metabolites when they entrap with the immune system, some are able to calm down the immune system and some are able to inflame in fact cause even the inflammation to go higher. So if you have high LPS, you're going to get high immune, very high immune response and if you have a butyrate, you're going to actually tamp down some of that inflammation. So I think probably with no doubt, you and I can agree whether it's vegetarian or not, there no such thing as universal healthy food. So just being plant-based person is not necessarily healthy because a lot of the poison comes from the plant and it's not healthy for you.

Dave Asprey [\(00:17:20\)](#):

This can sound overwhelming for a lot of people and we're throwing it around words like TMAO and you can read about that on my website or in the VI app and say, well, okay, how do I know if I have this? There actually isn't a way to know unless you test it. And if you did have this bacteria overrepresented, then you don't eat fish or red meat or probably eggs for some amount of time in your app you say until you retest. But it's legitimately about six months. Is it six months, not four

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

Weeks. If you change your diet and you really follow all the things your gut microbes start to change, but if you come right back to it, it goes back. So you want to give it probably, I would say three to four months is really where you start to get permanence of these activities.

Dave Asprey [\(00:18:08\)](#):

So Naveen, can I be a little bit controversial here?

Naveen Jain [\(00:18:12\)](#):

Please, please, please.

Dave Asprey ([00:18:13](#)):

If I gave up red meat for six months, I would lose my body composition and I would feel like crap. Of

Naveen Jain ([00:18:20](#)):

Course. And by the way, you're probably good because you're probably a low TMA.

Dave Asprey ([00:18:24](#)):

Yeah, I don't make TMAO, I don't have those things in my gut because I usually grass fed instead of conventional meat. It's conventional meat that I think the antibiotic residues cause the TMA farmers. But if I got my OME test back and instead I had a bunch of stuff like that, I think I would just take a little antibiotic and kill everything and then eat a whole bunch of soluble fiber that grows the good stuff back repopulate with good bacteria or a fecal matter transplant and eat my goddamn steak. Is this a bad idea?

Naveen Jain ([00:18:54](#)):

Well first of all, there are a couple of things here that your wholesale change of your gut microbiome is never a good thing, especially when you're doing a fecal transplant because what happens is that set of ecosystem was developed for a certain food, that person that you got the fecal matter from was eating. And interestingly, when you do a fecal transplant, you also end up inheriting lot of the other phenotypes that actually that person may have had. So in fact, just this morning Dave, I was just reading this research, which is your response to stress, forget about depression, forget about anxiety that your gut microbiome can cause with the gut brain axis. Today's research shows it's A-U-C-L-A research. Dr. Church shows that how you respond to stress is also controlled by your gut microbiome. So if you end up getting a fecal matter from someone who is not only depressed, anxiety and also has poor response to stress, you end up inheriting all of that in addition to other diseases.

Dave Asprey ([00:20:01](#)):

Now we're getting into the South Park episode on fecal matter transplants. Do you know the one I'm talking about?

Naveen Jain ([00:20:08](#)):

I do. I do.

Dave Asprey ([00:20:09](#)):

You do. And we'll play a little clip of that when we put this on YouTube. It's hilarious. Oh god. But the idea there if you're listening is going fecal matter What about 15 years ago when I was really desperate on fixing my gut before we could get the data the way we can 'em. That's why I'm such a big fan of it. But I swallowed an electrical stimulator once to stimulate my intestines. I tried everything and of course I thought more fiber even though the fiber that was feeding the wrong bacteria was good and I did everything wrong and I did take Hellman therapy. This is pig whipworm eggs and tapeworm eggs. They can't survive in the human body. They just basically stimulate your immune system. Then they go away. And I was on the border of getting a fecal matter transplant and I just didn't know who the right donor would be.

[\(00:20:59\)](#):

You don't want street grade poop. So how do you know who's healthy? And so probably the best thing that you could do if you have children and they haven't had antibiotics is take some of your baby's poop and that's going to be your best bet. But even then the industry has evolved and you can get capsules where they clean all the poop out and just have the right strains of fecal matter. And there's even some genetically engineered fecal matter transplants now where they're tuning them for specific results. I think it's really interesting. I have never put someone else's poop inside of me on purpose, but I might. I just would want to know a lot about the person and what the benefits would be. Here's another question for you. We know there's a couple of disturbing studies actually that talk about the matching of mitochondrial DNA and nuclear DNA.

[\(00:21:48\)](#):

This is really interesting because if you look at the nuclear DNA, this is the stuff that we think is our human DNA and that defines your hardware like the walls in a building, but the mitochondria, that's the electrical and heating and air system. So if you have the mitochondria for a factory and you have the walls of a retail store, it's not going to match that well. And this is really common in people now there's very few people who you have exactly, you are living where your ancestors for the last 5,000 years lived and you have only their nuclear mitochondrial DNA, because people travel around and we swap this stuff over the course of centuries. So we have a mismatch there. But then there's another match between your mitochondrial DNA and your gut microbiome, DNA. Now I'm talking about DNA, which to you is almost a swear word. So we can have a mismatch, but then is it mismatched or not? That's defined by RNA. Talk about why RNA is different than DNA because I think a lot of people listening might not know the difference environment is based on not really just what's there, but what's it doing And it's that combination that matters.

Naveen Jain ([00:23:02](#)):

Let's step back for a second here to give that basic bio since you threw in so many words, right? So if you look at the human cell, the human cell has a nucleus that holds a DNA, which is a blueprint that you get from your mom and dad. So 23 genes from your mom, 23 genes from your dad, and they actually form a nucleus, DNA. And then there's another organelle inside your cell that that used to be an ancient bacteria that's captured inside our own cell and it became symbiotic with that. And there are a bunch of



other organelles in our cell. So we have a nucleus and there are a bunch of organelles, cytoplasm and others like mitochondria. Mitochondria comes from your mother. So this is a simple thing. So your mitochondria always comes from your mother, whereas nucleus, your core DNA really comes from your mom and dad combine.

[\(00:23:59\):](#)

So you have DNA of each. Now that by the way, all of that stuff that we believe is now core to who we are is really where the science has now moved forward to say, look, less than 1% of all the genes that are expressed in our body actually come from a mom and dad. So mitochondria and the cellular DNA is really only 1%. The 99% of other genes actually come from these microbes. A hundred trillion of them that reside in our mouth, reside in our gut, all over our skin, in our nose, in our eyes, and in every single cavity and they reside. And by the way, these are now becoming as we are learning more and more are becoming the foundation to human health. So we used to think that these things are just parasite and somehow living inside us and our job is to get rid of them.

[\(00:24:56\):](#)

And people when they were taking antibiotics never realized what it in fact was happening. Because when you take antibiotics or as Dave you pointed out, take these mouthwash which are alcoholic mouthwash proudly say kills 99% of all the bacteria and viruses think about what they are doing. They fundamentally are completely decimating your oral microbiome. And when you have a decimated oral microbiome, you end up getting a oral microbial dysbiosis. And just like when you have the gut dysbiosis, you have a leaky gut. Now when you have the same dysbiosis in your mouth, you have leaky gums. And leaky gums have the same problem because remember our human body is like a donut. There is a tube that goes through us. The top of the tube there is top of the tube, the bottom of the tube, and then the whole body that surrounds over our tube.

[\(00:25:54\):](#)

And then there is a barrier that is inside us. That barrier is our gum lining, our gut lining. Now, most people may not realize 70% of our immune system resides along our gut lining. Why is that? That's the first line of defense. This is really where immune system is entra in with the environment. And as the baby is born, our gut microbiome teaches the immune system. What's a friend? What's a full, in fact, when the baby is born, first couple of days of mother's breast milk contains nothing but oligosaccharide. What is the oligosaccharide? It is a non dissolvable fiber. What happens then when you are drinking that milk? You cannot, that fiber, the human body is not designed to digest the fiber. It's primarily to feed the gut microbiome and the oral microbiome. Now what happens when they get this fiber, they're able to ferment it and that's how they're able to grow.

[\(00:26:58\):](#)

And it in turn, it releases things like short chain fatty acid the day when I'm going to talk about it later, but that is the fun. So think about what nature is telling you. Nature is saying, I just created an office spring and the best way to make this office spring healthy, not to feed it but to feed them. They are part of our old part of our body. So that means we as human are basically a super organism, which is a walking talking ecosystem. And when we think of them versus us, we really need to be thinking it is them and us together is what makes us who we are and when any part of us, whether our cellular system that is mitochondria or your DNA, when it is not functioning right or your gut microbiome is not functioning like or a microbiome, it is all interconnected.

[\(00:27:55\):](#)

They constantly are communicating with each other using these biochemical activities. Now, so that is just wanted to give you the idea of how, basically how human body works. Now Dave, I'm going to

answer your second part of the question that you asked. The difference between the DNA and RNA. So think about we all are born with the same D, n, A, from the time you are born to the time you die, you have the same DNA. So think about it, if you did something based on your DNA and you say, Hey, based on my DNA or on my blood type, I'm going to eat certain foods based on my blood type or my DNA. Now imagine now you did that and you gained 200 pounds, your blood type, which is still the same, your DNA is still the same. Would you do something different? Hopefully yes.

[\(00:28:43\)](#):

But he said, forget that I'm eating with my DNA, which is personalized to me and I'm eating for my blood type. Now you become diabetic, now you have a heart disease, now you have a depression, now you have an anxiety, now you have an Alzheimer and then you die. And a hundred years after you die, you look at your DNA again, same DNA. So DNA can't even tell you you are dead or alive, let alone are you becoming healthier or sicker? What happens? DNA makes R-N-A-R-N-A makes protein. So essentially RNA, the expression of the genes is what causes the human body to be sick or healthy. It is the expression of the genes that matters. Now, just to simplify that, for at least for the people who may not be as biohackers have gotten into biohacking themselves. Yet every part of our is identical DNA.

[\(00:29:43\)](#):

So if you take, remember all the crime shows, whether you got the hair and you got the skin tissue or you got any part of your body, it has the same DN, A. Now imagine if your hair, your neurons in your brain, your heart, your kidney, your skin, your eyes, your nails have the same DNA, yet I don't have the eyes growing on my fingers and the nails growing on my head. Why is it when the cm, DN, A, the answer is when certain genes are expressed, it becomes eyes. When other genes are expressed and other genes are suppressed, they become nails. So the point is the same, DNA is like an alphabet. RNA is the story you write. So what story are you writing? And that's what you need to measure because once you measure that, you can actually now deduce what amino acids and proteins are going to be produced, what signaling molecules are going to be produced based on a certain RNA. And that's the reason by doing a DNA test and measuring or doing anything based on your DNA test is a complete foolish exercise. Same thing, eating for your blood type is a foolish exercise because your blood type never changes. Think about all your life. Blood type is the same even though your needs are very different all through your life.

Dave Asprey [\(00:30:56\)](#):

I really want eat right for your blood type to work because it just rhymes and it doesn't work. No longevity doctor that I know of uses that and I've tried it and I've just over the last 20 years it keeps coming up. And if only it was that simple, there might be some very basic trends there. But what you're doing is going to affect where you live, how you sleep, how much sunlight you get. And the weird thing is what's going on in your mouth changes your gut. And there's another thing you mentioned Naveen, that really doesn't get enough attention in biohacking circles and it's called LPS or lipopolysaccharide. And this is the bacterial toxin that causes a lot of problems in your brain. It causes rheumatoid arthritis, it causes neuroinflammation throughout the body and you can get lipopolysaccharide from bacteria in your environment if you have leaky lungs and it can absorb through your skin a little bit.

[\(00:31:57\)](#):

But if you have a leaky gut or leaky gums, then you have bacteria in your gums making it and putting it in and then it causes inflammation. So LPS minimization is a core part. Even the bulletproof diet MCT oil protects the liver from LPS toxicity, which is a really important thing. Collagen helps to keep the barriers

in place, so does having a healthy microbiome, but you just don't know what it is for me. I know lipopolysaccharides were a major part of my problem. And unfortunately toxic mold gives you more LPS and gives you a leaky gut. So I had all this complex stuff going on when I was 19 and I was really heavy and my brain wasn't working. If I could have had a biome test, it would've told me exactly what was going on. I have these LPS forming bacteria, I have leaky gut and here's what to eat in order to fix it. And I probably, if I would've had access to the oral microbiome, it would've said on my gut, it's a disaster in there, change what you're doing. So how would we go about lowering LPS in everyone? Is there one thing that helps?

Naveen Jain ([00:33:07](#)):

I wish it was true that because there's no such thing as one silver bullet that's going to make everyone live longer, and this fundamentally I think is such a problem with us, we are trying to find the one fountain of youth, one silver bullet. All we have to do is take that one pill and magically all 8 billion of us are going to be healthy and live for long long time if not forever. What is turning out to be is there is going to be not one silver bullet, but very likely 8 billion silver bullets, one for each person. That is going to be the key. And that silver bullet is going to constantly change and adapt as your environment changes based on many, many things that we're going to talk about that in a second here. But the key really is to understand and constantly monitor what is happening inside the body.

([00:34:01](#)):

And this may be a good time for me to just step back and say, what is it that we do? Because we keep talking about if you had a Y test, what does the Y test actually do? So basically there are a couple of things here. Wyoming is an at-home test. You don't need a doctor's prescription. You go to [wyoming.com](#) and Dave is going to give you a code where you can get some discount. And we really don't make any money on these damn tests. We really make 30 bucks on this test to begin with, right? So here's what happens. You order a test and you give us a spit of your saliva, finger prick blood at home, you get drop over four drops of your blood on the tube and then you give us the touch of your stool. And then we analyze, not just we analyze every single RNA in your body, period.

([00:34:49](#)):

So in a stool we are not just analyzing your gut microbial RNA and looking at their activity, we also see all the gut lining that is being shed. So we are looking at all the human RNA that's coming out of your poop. Same thing in saliva. When we look at your saliva, we get all the human gene expression, all the oral microbial gene expression. When we look at the blood, we are looking at all of your cytokines, literally every interleukin. And then we are looking at all of your mitochondria, right? So we are looking at all the mitochondrial RNA, and then we feed these about 50 million data points and all of the phenotype to our AI. Now Dave, you'll be so proud of us, we have now analyzed close to 1 million samples, 1 million samples and collected over a hundred quadrillion biological data points all connected to phenotype.

([00:35:48](#)):

So our AI now says, Hey, look at this person coming along. This is what is going on. And we know having analyzed so many different people longitudinally, this is what this person needs to do to reduce their

LPS right now. And that's basically, so after you do the test, it comes back in two weeks on your app, it starts to tell you number one biohacking thing. You can't improve something unless you measure it, right? So we give you your biological age, we give you your cognitive health, your heart health, your gut health, your oral health, your inflammation health. And then you say, whoa, I am a nerdy boy. Talk dirty to me. Here you go. Here's your LPS production. Here's your TMA production, here's your RICS in production, here's your biofilm production, here's your fledger assembly, here's your uric acid production. And literally we go through every single thing that is going on and then we say, you say, okay, okay, got it, got it.

[\(00:36:49\)](#):

What should I do now? Okay, what here are the foods you should eat? And here is why there is no black box. You click on the food and say, we saw your methane gas production was too high. We skip this food for the next three to four months and then retest now or don't eat these foods. Here is why eat these foods. Here is why. And then we go step further. We say, Hey, you can't get this amount of nutrition just from the food alone. Unfortunately, the way we grow food, it now takes 15 avocados to get the same nutrition that 30, 40 years ago we needed one avocado for the way we are growing these foods have basically have no nutrition require soil is completely depleted from all them nutrition. And all we do is put a bunch of chemicals, pesticide, insecticide, and grow these food to be large and bake, but they have no nutrition anymore.

[\(00:37:42\)](#):

So now we tell you, Hey Dave, based on all of your analysis you do need every day, you should take 79 milligram of amylase every day. You should take 22 milligram of lycopene every day. You need 78 milligram of bourbon every day. You need 72 milligram of elderberry every day. And we literally go through every vitamin mineral, herbs, digestive enzyme, amino acids, and then we custom make it for you. There is no pre-made supplements made. We actually make the powder for everyone, put them in a capsule and ship it to you. So if you notice, this is my supplement every day. If you notice here now that you can see it has manufactured on date, not expires on every single month. It is made just for me. And then we go and say, what do you need for your gut microbial activities? Here is all of your probiotics, prebiotics, postbiotics that you need.

[\(00:38:43\)](#):

Next thing is your oral microbiome. These are my personalized oral zens that are designed to adjust my microbiome. And this is the part you are the first one to be seeing it and hearing about it is launching next week or actually maybe today, is personalized toothpaste made just for you. It is am and PM individually dosed everything in the M to remove the plaque on contact and in the evening with all the postbiotics, probiotics, enzymes, and essential oils to adjust your oral microbiome. And this is how once you do, you start to see lower inflammation in your mouth, lower inflammation in your gut, lower inflammation in your body. So not only we minimize LPS, we are minimizing sulfide production. We are minimizing the ammonia production. We are minimizing all of the things that causes your body to be inflamed and mitochondria to be healthy. Because remember these mitochondria used to be ancient bacteria. All of these microbes are communicating like their brothers and sisters. So your mitochondria is always in connection with gut microbes and oral microbes. So if you find yourself having low energy and brain fog, don't blame yourself. Blame blame your gut bacteria and oral bacteria.

Dave Asprey [\(00:40:07\)](#):

It gets to be a little bit overwhelming because every time we think we know, oh, it's your gut bacteria, actually no, that's affected by your oral bacteria. Oh no, that's affected by what you eat and it's also by how you cook it. And so many people including me at times in life, well what if I'm not doing it right? Here's the answer. None of us is perfect. None of us is doing it right, even a little bit. I just want to do it better without spending a lot of energy on it. If I spend all of, I spent eight hours a day getting younger, I didn't really win because I didn't get to do what I wanted to do for eight hours a day. So there's probably 10 years from now we're going to figure out that we're all entirely based on neutrinos or some weird subatomic particle, and that's what controls mitochondria.

[\(00:40:55\)](#):

It doesn't really matter. What we're doing is we're getting in the direction of living longer and having more energy. And every time we can find another layer down, we have a broader effect. And I think what you are discovering because you just have enough data with ai, you couldn't have done this 10 years ago, is that what's happening in the mouth is foundational to what's happening in the gut, which is foundational to what happens in mitochondria. And so the idea that you fix problems with your gums and Alzheimer's disease and heart disease risks go down that is real

Naveen Jain [\(00:41:32\)](#):

And diabetes by the way. And diabetes and cancer.

Dave Asprey [\(00:41:35\)](#):

So maybe we should fix that. And I also, I used to have a lot of dental problems when I was younger and heavier. I didn't get a lot of cavities, but I would develop plaque like heavy duty plaque. I had to get my teeth cleaned three times a year and they would just break off pieces of this mineral plaque, by the way goes, that's oxalates for you. I was eating a very healthy diet, very high in almonds and raspberries, which are all those things. And spinach, I ate a lot of spinach back then and it was affecting my oral health. And so I always had bleeding gums and I worked so hard on that as I cleaned up my diet, it largely went away. But I know the bleeding gums were letting LPSs in right next to my brain and it was part of the reason my brain wasn't working either. So I got into something called remineralization of teeth, which no one thought was possible. There were people who heal cavities and that's why I was one of the very early advocates of vitamin K two, which helped you to do that. But you also need specific ingredients in your mouth and there's lots of documenting cases of people healing cavities even. And some of those are the same ingredients you're using in your custom formulated toothpaste. What are the magic ingredients and what's the difference between the morning and the night toothpaste?

Naveen Jain [\(00:42:46\)](#):

So very different. So the morning toothpaste is designed to remove the plaque and reduce the gum inflammation, right? So the formula that we found came out of the lab with 35 peer reviewed, studied instead of today. The way toothpaste works is toothpaste basically has sand is a silica, and you scrub the plaque out just like a dentist is going that it's scrubbing it out. We realize that basically biofilm, it's the biofilm. The plaque is basically a strong biofilm that's sitting on top of an animal. What if you can break

the biofilm down? And it turns out there's an ingredient called MSM that penetrates the biofilm. And then we use something called STPP that removes the glue between the biofilm and the animal. And literally when you're brushing it, you're just removing the plaque on contact and it has been proven to reduce gum inflammation by 250%.

[\(00:43:40\)](#):

So basically the idea is once you remove this biofilm, it reduces the gum inflammation removes the plaque. That's in the morning in the evening. It has primarily around probiotics and postbiotics. Most people who may not realize what postbiotics are, it's turning out that actually postbiotics are more important and in fact sometimes better than probiotics in many cases. So this is one great example that lot of the people who are probably in bio community are taking Kerman. Kerman is considered a probiotic. What people don't realize is it is the same kerman that is the number one reason for multiple cirrhosis. So MS and many types of other gut lining diseases are caused by kerensa. In fact, if you look at CIA's, full name is Kerensa mucin filler and mucin filler means lover of mucin. It lives inside your mucin. So many people who go on these long fasting diet, imagine what's happening.

[\(00:44:50\)](#):

I'm not going eat for 72 hours. That is what I'm going to do. While evolution has taught us, if you don't feed them, they're going to find a way to feed themselves. They're going to eat your mucin, and next thing in your mucin layer is completely disappeared and now you have a gut. So coming back to it, what we realized was that actually by doing some of the postbiotics, so Kerman post biotic, what that really mean, they allow the kerman to grow in the medium, let it produce its metabolites are like butyrate and short chain fatty acid and they eat, kill the bacteria, but the shell of the bacteria is still there. And when you take that prebiotic, the latest in fat research shows, it is significantly more effective because your immune system still sees the shell of the bacteria and all of the bacterial metabolites. And I think these metabolites are turning out to be the key to actually interaction with our human health and our immune system. So the postbiotics, many of these postbiotics, in fact, we are moving more and more towards postbiotics and prebiotics and trying to eliminate as much of these probiotics as possible to actually get the better effect on the human health.

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

I agree that Akkermansia is a dual-edged sword. I've also seen really good results from Akkermansia. But here's the thing, I don't know that a three day fast is enough to cause problems. What I do know is that if you have Akkermansia and you go on say a carnivore diet, and I think even five to seven days is fine, and this is one of the primary reasons, the Bulletproof Diet, the reason I wrote this book is this was the first book that combined intermittent fasting with the idea of clean keto as a tool but not required. And the deal is every weekend you eat carbs, which feeds the gut bacteria. So they don't want to eat the lining of your gut. When I did three months of carnivore, we didn't call it carnivore back then, the only plant I did coffee with it, but I did this, this must have been 2008, 2009, as I was testing all this stuff for the Bulletproof Diet before I wrote it, after three months of that, I was waking up 12 to 20 times a night without knowing it.

[\(00:47:22\)](#):

I woke up feeling like a zombie. I had lost weight, but I actually gave myself more food allergies and it's because I had leaky gut. Yeah, I gave myself leaky gut by eating zero carbs. So the hack for that is you can take prebiotics while you're doing a long fast that do not raise your blood sugar. And there's still people out there that go, you can't have fat or you can't have fiber during a fast. It's not a fast guys.

Naveen just explained why this is important. So you can fast for a long time. All you have to do is take a little scoop of prebiotics so that you don't piss off your gut bacteria. We are doing the fast and then you can do it as long as you want to. Of course you have to have salt and all the other stuff that's necessary.

(00:48:06):

But I feel like there's so much misunderstanding of fasting and I'm also a huge fan of doing a carnivore diet for a week. And then instead of saying, well, I can't eat any plants because some of them are bad, you just got to figure it out. You don't have to eat a lot of plants, but once a week at least have soluble fiber. And what you're going to find is you get better results on carnivore when you do it that way, right? And I'm all over, I eat 200 grams of animal protein today. I am in on that stuff, but I don't avoid all plants, I just avoid most plants, especially the ones that I know don't work for me. I

Naveen Jain (00:48:39):

Mean especially for you, the high oxalate, I have a lot of oxalate issue, not that I'm trying to discuss your

Dave Asprey (00:48:45):

Medical comments. It's the only thing on my last, my own test, the only thing that showed up was you have bad oxalates. Everything else I have as good as it'll get.

Naveen Jain (00:48:51):

And that's the reason the kale and the kale that you hate is for a reason for that. Your body is saying, don't eat that shit.

Dave Asprey (00:48:57):

The thing is, I wish it was just kale, spinach is worse than kale. It

Naveen Jain (00:49:02):

Is, it is. Spinach is

Dave Asprey (00:49:03):

Worse. Some of the foods that are common paleo foods, even some of the things that people have found like an autoimmune paleo diet, what I looked at is, okay, how do I avoid the really bad stuff? So if you look at sweet potatoes and almonds, those are all also high in oxalate. And when I cut those out, even though I love sweet potatoes, I get better results. And raspberries are super high, almost as high as



spinach. So you eat blueberries instead. Knowing those nuances, I'm right on the edge of writing another book or at least doing another maybe an AI powered version of the Bulletproof Diet so that I can really get the nuances. It is personalized. I know that oxalates are an issue. I look at what you eat. If I ate that, I'd have arthritis the next day and you just chow down on it. How do you do? Er, it doesn't even make sense.

Naveen Jain ([00:49:49](#)):

Well, I think first of all, again, I think a couple of things here. One is how you cook your food. A lot of the people, and again, they talk about don't eat lentils and legumes. I mean, for heaven's sake, that is a staple diet for 1.4 billion people who live in India. But what we have learned over time was you don't eat lentils the way the Westerners think. We eat lentil. What we do is very simple. You soak your lentils for overnight, and when you soak your lentil, all those chemicals actually ends up releasing because now it's getting ready to sprout. And what we do is we dry, then we actually just vat it and we let it sprout. We literally sprout every lentil, every legumes, every beans, and then when we cook them in a pressure cooker, it's really how you get rid of all of the toxins, whether it's the lectins or otherwise.

([00:50:42](#)):

And so it's not that you can't eat lentils, so don't fall for this idea of lentils are bad for you and all the legumes are bad for you. All these beans are bad for you. I'm sure they're bad for some people. I'm not suggesting they're not bad for some people, but for other people it actually could be a superfood I eat. I would say primarily majority of my calories will come from lentil legumes and beans. You see me chow down lentils all day. Oh yeah. But it is how we cook. That is really what matters, right?

Dave Asprey ([00:51:16](#)):

I'm going to swear a little bit here. Oh, doesn't it have to do with your genetics? Is your DNA now your RNA? I mean you're from India, your family's from India, you guys have been eating beans for a long time. My Northern European gene, we never even saw a bean until 200 years ago.

Naveen Jain ([00:51:31](#)):

But I would argue it's not my genetics, it's my gut microbiome and oral microbiome. Remember how your gut microbiomes are populated when babies going through the birth canal is how your first exposure to the microbial activity happens, right? So it's literally lack of the mother's microbiome and the breast milk that feeds the antibodies to these different microbes. So you literally are inheriting the microbes from your mother as a part of a childbirth. And that is so you could argue, yes, inherited, but it's not necessarily your DNA. It is actually your gut microbes and the antibodies that are coming from your mother is what causes us to inherit a lot of these genetic, genetic traits that in terms of food, what we like and what we can digest and not digest and our microbes actually good thing is, unlike your hardware, which is your DNA, this is a software.

([00:52:33](#)):



These gut microbes are changing all the time based on the environment. Because these guys have a short life, they're able to adapt to the nature all the time. So if you move to HDA society and you are only going to eat a different type of food, guess what? These microbes are going to constantly evolve and change into that. So your microbes are basically think of your software that is adapting to your nature of what's going on and their activity is constantly adapting. So I'm going to just maybe just separate out one part that I think we have not quite hit on. It is not about the organisms themselves, but the functions that these organisms are performing. So it's not just about the good bacteria or a bad bacteria, it is about the good behavior or the bad behavior. So for example, 84% of us, they have P gja virus in our mouth.

[\(00:53:33\)](#):

Now people are going to say, oh my God, I read about P gja virus, that terrible bacteria, I need to take a mouthwash and just kill them all. It turns out only 16% of the people where this P ging virus actually expresses something called ging pain. That ging pain is the toxin that is found with the people when they have Alzheimer, when they do the pathology after they die, or ging pain is the one that causes you to have gum inflammation and periodontitis. So it's really knowing that not pre giv wireless, knowing where your gja pain production is actually now happening is the time for you to start doing something. And the way you do that is to actually increase the activities of other microbes. So they keep this gja pain actually in control.

Dave Asprey [\(00:54:22\)](#):

That makes a lot of sense. I still think though, some lectin sensitivity is genetic.

Naveen Jain [\(00:54:28\)](#):

If that was true, that everybody in the family would have it, right?

Dave Asprey [\(00:54:31\)](#):

No, we're on and off. For instance, my kids

Naveen Jain [\(00:54:34\)](#):

Now you are talking about Jesus on or off is in RNA, not the DNA.

Dave Asprey [\(00:54:39\)](#):

No, it is not on and off. It is whether they inherited it or they didn't. My son got my nightshade sensitivity for those things. If I ate a bite of nightshades, I get joint pain. I had three knee surgeries

before I was 22, my daughter can eat the same food. She doesn't have that gene if they don't affect her at all. So one of them as if one of them doesn't.

Naveen Jain ([00:54:59](#)):

And so my point is, it is possible that, so DNA, there is no doubt about 10 to 15% of the impact on your health and on your longevity comes from your DNA. So it's about 10 to 15%, but 85 to 90% of the impact actually is the environment and how they're expressed. So there are basically five layers of things, five things that impact your longevity. So maybe this is just a good time to start going through those five things. Just like the Maslow's hierarchy of needs. The number one thing that impacts your health and longevity is nutrition. So if you don't provide your body the right nutrition, it's not providing the right fuel for your expensive car. So if you're driving a Ferrari and you're going to put some type of cheap fuel in that, it's just not going to drive well. It doesn't matter how well your body is built unless you give it the right fuel, nothing matters.

([00:56:03](#)):

And again, there is no such thing as right fuel for everyone. It is different for everyone. So this is where you need to learn. Just like the thing I love about biohackers community is they realize their body is not same as their neighbor. Their body is not same as their parents or their son or daughter or spouse. They're very different. And each person has to learn about that. And I think that's where you come in. That's where one comes in. We analyze your body to tell you exactly what's happening and what to do about it. So that's the number one thing. Number two is stress. Your stress changes your oral microbiome. Your stretch changing your gut microbiome, your stress changing, your mitochondria stress actually also causes inflammation. It changes your immune system. And here is why stress, if there was no stress in the body, we couldn't have actually survived.

([00:57:02](#)):

Stress is essential for human survival. So think about when we were living in the savannas of Africa, when we saw a tiger, we got very stressed. And that what happens when you get stressed, your body goes into fight or flight response and fight or flight response. There's a couple of things. It starts to pump the endorphins in your body and it starts to shut down. All the non-essential system, what it consider non-essential shuts down your digestive system. It says, don't you worry about digesting your lunch because you're going to be lunch for someone very soon, right? It shuts down your immune system. Don't worry about it right now. You don't need it. You're going to run away. And if you survive, your stress went away, everything was fine, or you got eaten and you stress completely went away and you were fine, right? There was only two outcome, but stress never lasted.

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

So what happens is now you can imagine when you are under stress, you can't digest your food. No, you can't get nutrition because you're fight or flight response. So some of us, as human society evolved, we say, you know what? We are going to start doing some gratitude, some prayers to move our body from sympathetic mode, which is really stress into parasympathetic mode so that we are able to now get your digestive system and immune system to work. And that's the reason people who are stressed get sick more often, they get more infection because your immune system is not working optimally. So that's the number one. Number two thing you have to do nutrition and then comes to stress. And again, you talk a lot about it. You have to find a way to reduce your stress through meditation, through the ways to understand how to get your body to relax so it's no longer feels that stress, how you respond to stress. And sometime you have to get rid of the root cause of that stress, whether it is work or whether it is

other external environment. I was going to say maybe possibly your girlfriend will spouse, but I don't see that anymore because my wife will kill me for saying that. But it happens. Whatever the root cause is about

Dave Asprey ([00:59:12](#)):

Your mother-in-law. No, you can't say that either. There's nothing

Naveen Jain ([00:59:17](#)):

But you'll change the environment that causes you stress and move away. If Victoria is not a great place because causes a lot of stress, move to Austin, right? Whatever that

Dave Asprey ([00:59:26](#)):

Is, I certainly did that. The lack of sunshine really was a stressor. There

([00:59:31](#)):

You go. When it comes to stress, it's the speed that you turn off. The stress is really, really important. This is a core thing at upgrade labs and also how you process reality is the stories you tell yourself. And that's why I do 40 years of Zen, which is my big neuroscience thing because you can be in a situation and you can have a stress response or not have a stress response in the same situation. And that's a matter of programming your body. I think it's actually a mitochondrial programming really, but we see it differently. So our mitochondria are giving us all these decisions about is it a threat environment or not based on something called the cell danger response. And it rolls up into our nervous system. So you can reprogram that and sometimes things just are stressful and then you've got to change the situation. I believe it's possible to not have the stress response that most of us have to things that are emotionally stressful, but physical stress is still physical stress.

Naveen Jain ([01:00:28](#)):

Well, first of all, I want to double down on that. I think I should have mentioned 40 years of Z. It has been one of those most life changing experience. So thank you Dave for getting me to experience that. I think to me, interesting thing was I never thought I was stressed yet my body probably felt that stress, but mind never felt because I never felt threatened. As you know, we all from our primitive brain has a structure called amygdala. The purpose of amygdala is to constantly look for danger in the what is happening, what is danger, right? So it's constantly looking for danger and that means it's probably one of the most active part of our brain. Many of us who are trying to sell you things have actually learned the thing, how to use Amy amygdala to have you buy things. So they cause you to believe in fear.

([01:01:24](#)):

And that's the reason when you hear about any news, what happens in every news, constant negative news, C, cnn, which is basically if it bleeds, it leads every local news murder here, the rape here and the crime here just constantly because our amygdala is looking for it so they know how to get your attention. And 40 years of Z actually lets you understand why these things trigger you. What is the

reason you get triggered? And once you understand that, hey, I know why I was triggered suddenly the same thing that happened. So you said not going to let it trigger me.

Dave Asprey ([01:02:08](#)):

We weren't really going to talk about 40 years of zen, but I was honored that you decided to come because I've had 1500 high-end entrepreneurs come through. But you're one of the happiest guys I know to be I've one time seen you really, really sad, but even when things are not where you want 'em in business or something, you have this same, and I saw your brainwaves and I will tell you after 1500 people, I've never seen a brain like yours. And even then you had a few things. Oh, I can turn off my response, I can turn off my response to that. It's fascinating to see the changes in people. There's a certain thing we call it like takeoff mode, and it's something that advances in meditators can achieve after decades of this. And it's one of the many goals. At 40 years of Zen, you had the highest levels of that brain state of anyone I've ever seen, which is why you sit in this creative joy all the time.

[\(01:03:06\)](#):

It's why you're so curious and so passionate about gut bacteria, which a lot of people would say you're like a software engineer. What do you have to do with this? Be like, because it's so cool and it's so fun and that's why I just like hanging out. But when I saw a brain, I'm like, wow, if we could teach more people to have brains like that. So what I want to do at some future point is get some tests and EEGs and I'll bet you that we can show if you have these gut bacteria going on, that it affects your brain, not just the size of the waves in your brain, but the type of them because you can have a stress response in your gut bacteria. People don't know this, you probably do, but your gut bacteria, they experience circadian stress. So they need to know what it's nighttime.

[\(01:03:50\)](#):

So they can do their nighttime thing too. All bacteria do that. They have a daily cycle. So if you stay up late at night and you eat Popeye's chicken in the middle of the night after drinking, your gut bacteria are stressed and when they're stressed they say, well, something's trying to kill me. It's probably another bacteria or something. So they make extra toxins to protect themselves called lipopolysaccharides. And so there's this weird physical stress that can come just from your gut and it will feel like emotional stress. And this is something that a lot of people, I'm having a panic attack. I'm like you're having dysbiosis your gut bacteria off and they're causing physical feelings of anxiety, which you then interpret as your mother-in-law. And it's a really complex system, but when you calm the body, you energize the body and then you train it to not have an inappropriate stress response. There's levels that are so that we can hit that are so amazing, and you just be more aware of the world and you can enjoy more often. And I think it's hard to sit, enjoy if you have lots of lipo because your brain's inflamed. It doesn't work, right? So I want to find the correlation there.

Naveen Jain ([01:04:57](#)):

We need to do some therapy on between you and your trigger with Mother-in-law. I think there's something happening there. We need to really figure this thing out.

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

I don't have a mother-in-law anymore. I am divorced.

Naveen Jain ([01:05:08](#)):

I know, but that mother-in-law trigger seems to be causing a lot of anxiety over,

Dave Asprey ([01:05:12](#)):

It's actually, it's just a common joke. I don't have any particular issues there. So for former Mother-in-law, if you're listening, which you're not, then I'm not talking about my former mother-in-law. Only Dean like that try to get me in trouble going intervene.

Naveen Jain ([01:05:29](#)):

Well that's my job. Somebody asked to do that. Alright, so now we talked about that. The third thing is exercise. And this is again, we are going to have just a little bit more time on that exercise is really interesting. Some people have this idea that you have to spend four to eight hours in the gym pumping iron for them to be doing exercise. And what we all learn is it is not about how many hours we spend in the gym. It is about giving the proper two types of things, increasing your heart rate and essentially sustaining that increased heart rate for a short time and then basically doing some type of interval training. And you don't need a lot of it, 15, 20 minutes at the most or even fast walking uphill for 30, 35 minutes is all you really need. And then the second part is muscle mass.

[\(01:06:18\)](#):

You have to do the weight training and you have to do that anytime in your life, even though you never did when you were 2030s, forties, 1560s. You can start any point of time and get the benefit. And to me that is so important because exercise is the key to in fact the human health. In fact, there was a study that came out yesterday that shows that based on how fast you walk, it can determine when you would die. Your longevity is determined by basically your basic cardiovascular thing. And this upgrade lab comes in. And I was going to have you now talk a little bit about that upgrade lab and how this exercise fits into that.

Dave Asprey ([01:07:01](#)):

It's really funny that you're going there, but that's how the world works as far as I can tell Naveen. So I hope for people listening to this show, we're going into a lot of different topics here, but what it comes down to is there's a stress response in the body and it comes from your gut bacteria, it comes from environmental signals, it comes from running, it comes from the wrong lights at night. And the very definition of biohacking is change the environment around you and inside of you. So you have full control of your own biology. And where it gets really difficult to the point really only AI or maybe someone who's been a clinician for 30 years and starts to do the pattern recognition can really

understand, oh, there's all these different variables. You just have to get enough of them about right? And then all of a sudden it unlocks these new states of consciousness, this new performance, and it's very life changing, but it sounds really complex.

[\(01:07:58\)](#):

You don't have to do everything. You just have to get it about right. And then you have so much energy that it's a continuous process they call meditation a practice. And exercise is something you do once, is something you do regularly, and it's a practice of becoming healthier and stronger and more functional. The idea here is what's the right dose of a food? What's the right timing for a food? What's the right dose of exercise? What's the right dose of stress? But here's a question for you. Is there a dose of lipopolysaccharide that is actually for you?

Naveen Jain [\(01:08:30\)](#):

Well, it is so toxic. There is no, even the smallest amount of lipopolysaccharide can actually kill us. I mean, it is just so toxic, especially some of the small particles or LPS that can easily leak into the gut. Those are really, really toxic. I mean, LPS is probably one of the, I would say very potent poison that can kill us very, very quickly. So I think they just know right dose of LPS. I mean the zero is really the right dose for

Dave Asprey [\(01:09:00\)](#):

It. And people love these simple ideas like what doesn't kill us makes us stronger. And what about cyanide and mercury? Those aren't like that. I think lipopolysaccharide is one of those things. And as an example of how resilient you can be, Wim Hof injected himself with lipopolysaccharide and showed that he could consciously control the inflammation with cold exposure and with his breathing exercises. So mind over matter to a certain point, but there is no beneficial amount of that toxin. And when you see people get sepsis or they get an infection that puts 'em in the hospital, it's lipo polysaccharide and it causes systemic things that you wouldn't think I got a hot tub infection about oh five months ago or something and it's just a skin thing. But I woke up the next morning and I had the worst back pain and joint pain. My whole body just felt like I hit by a truck and fortunately I figured out what it was and I treated it.

[\(01:10:06\)](#):

But otherwise that would've continued. And it's just a tiny dose of this. But you wouldn't think your sore back when you wake up in the morning is caused by gut bacteria or caused in this case by something on my skin. It's actually like that. It's just we don't think about it like that. So I love it that we're going deep on it and the fact that one of the major sources is in the mouth, not just in the gut is really important. And then something else you're doing that I think is also really, really transformational is well get the right bacteria in your mouth with a mouth probiotic, which is the customized oral lozenges that you're making is another really good idea because if your mouth bacteria determines your gut bacteria, maybe you don't need to take probiotics, maybe you need to take prebiotics and then get the right bacteria in your mouth and then they'll change what happens. So this is fascinating. So you have a million samples

Naveen Jain ([01:10:59](#)):

Once you digitize the human body. So remember we are taking the analog signal like saliva, blood and stool and converting them to digital signal. Now it becomes simply a big data problem. So no human being can read the number of scientific papers that come out every day. So the number of scientific research that's coming out every day, no human being can reach them in 24 hours because there is so much research and then analyzing it and understanding it. Even the best doctor in 30 years may have seen 10,000 patients, 20,000 patients, but that's it. Now think about a million people and having all of their data in the memory and analyzing it and finding the pattern that no human being can do can only be done through ai. That's super intelligence thing, right? So that is in terms of exercise. Now coming down to, so we talked about nutrition, we talked about stress, we talked about a third layer is exercise, the fourth layer, the fourth layer is sleep.

([01:11:59](#)):

Now like many things in life, the quality matters, not just that quantity, the quality matters. So it's not how long it is about how good, right? So that really is. So measuring your re sleep and a deep sleep is really, really important. So I use my ordering. I also have something called eight sleep mattress that keeps the temperature, just the temperature as I go into the different sleep mode. So going from when I'm falling asleep, when I go to rem, sleep, deep sleep, it keeps changing the temperature, getting about one and a half hour to two hours of REM sleep and getting about one and a half hour of deep sleep is really the key to in fact getting your brain to get rid of all the toxins through the brain. So this is really where the toxicity happens in the brain. So if you can get that in five hours more poverty, you if you need six, take six.

([01:13:00](#)):

If you need seven, take seven. If you need eight, take eight. But simply lying in the bed for eight to 10 hours hoping that you're getting a good sleep is not it. You need to get the quality. And here I think, Dave, you mentioned it already, it is not just about what you eat, the stress or exercise, it is the timing you eat at. So the couple of things I learned at least looking at all of the data that we have analyzed, if you eat give at least three hours between the last meal and before you go to bed, is the time when you end up actually digesting your meal. And when you are sleeping, your bacteria are no longer actually having a problem with your circadian rhythm. So really getting three hours to four hours of break between your last meal and going to sleep.

([01:13:51](#)):

Number two is at least this is what we realize. Many people like me, even if we take a tiny amount of alcohol in the evening, it completely disrupts my ram sleep. It's not that I don't get to sleep. My ram sleep goes out the window and so I can still sleep seven, eight, I get very tired, I go to sleep really fast and then I'm tossing and turning and my REM sleeping out the window. I may sleep for eight hours, but that's a terrible sleep I get it turns out a lot of people metabolize caffeine differently. Some people can have caffeine at 3:00 PM and it still be fine. Some people have caffeine at 8:00 PM and it still be fine. And some people take caffeine, even half a caffeine and they are not. For me, the caffeine does not matter as much. I mean at three o'clock or four o'clock, I can have a great cup of coffee, a cup of matcha tea, and I'm still okay, but some people are not.

([01:14:46](#)):

So this really, again, very personalized on how you metabolize caffeine and caffeine is known actually for tremendous amount of improvement in your brain and longevity. In fact, there are very few things that are being generally turned out to be good is caffeine only with the people who don't have a problem with caffeine? And obviously if you have high anxiety and you're having a trouble sleeping, it's okay to

cut down caffeine. It's not that you have to have a lot of caffeine, but it is not bad for people. So somehow this idea of caffeine is bad for you. It's a misnomer.

Dave Asprey ([01:15:23](#)):

It turns out moderate doses of caffeine are generally good for mitochondria and I would be absolutely wrecked if I had caffeine at four. I know it ruins my sleep. I can do it up till two. So I cut myself off and I switched to decaf after two if I want more coffee. And it turns out decaf has all kinds of prebiotic benefits as well.

Naveen Jain ([01:15:45](#)):

And a lot of polyphenols,

Dave Asprey ([01:15:46](#)):

A lot of polyphenols. In fact, I've come to the point, I think polyphenols are mostly just prebiotics. They feed the good guys in your gut. You do take polyphenols. This is interesting melanin, you have darker skin than I do, and darker skin doesn't age as much as lighter skin. And so there's a lot of benefits to having some melanin in your skin. So I actually inject stuff so I have more melanin, I inject cyte stimulating hormone, but melanin itself is just made out of cross-linked polyphenols. So they're actually building blocks for the body just like collagen is. And they're very potent prebiotics to feed the anti-inflammatory gut bacteria, which is why I'm a fan of coffee. And coffee is high in melanins, which are precursors for melanins. If you really wanted to get a tan, what you'd want to do is make sure you have some coffee before you get in the sun along with a bunch of other stuff that's going to protect you from excessive uv, but getting some ultraviolet, very provably, good for you. It

Naveen Jain ([01:16:46](#)):

Makes vitamin D.

Dave Asprey ([01:16:47](#)):

It does. And does it protect or affect your gut bacteria?

Naveen Jain ([01:16:51](#)):

It's interestingly, I have not seen studies of how UV actually protects bacteria at all. But vitamin D being protective is probably is the mechanism it probably works through is that UV light produces a vitamin D



that is protective of both cellular health and also your microbial health. So that probably is the right mechanism there. Interestingly, to think about the brown people that you were talking about, I think it's generally brown bread is good for you. The brown fat is good for you, and if anybody is listening to it, brown people are just good for you. So if you have a choice between a brown people and not so brown people, I would pick brown people any day.

Dave Asprey ([01:17:34](#)):

I would say that having definitely brown skin is a longevity factor, but I'm not sure that brown bread is good for you. It's got all the crappy stuff that you don't want on the outside of the bread.

Naveen Jain ([01:17:47](#)):

Oh god. I mean just destroying my whole premise of brown is being good for you, but I still can

Dave Asprey ([01:17:53](#)):

Because very lazy Navin much more lazy than you. I asked Chad GPT to answer that question and it looks like there's two studies showing that exposure to UVB light. In other words, sunlight increases the diversity of the gut microbiome. And in the study they looked at people who received UVB exposure three times a week. And this is interesting, if they were not taking a vitamin D supplement, they had a notable increase in gut diversity which brought their microbiome to similar levels as those who were taking vitamin D.

Naveen Jain ([01:18:26](#)):

Yeah. So I think it looks to me vitamin D may be the mechanism that I mentioned that caused that.

Dave Asprey ([01:18:32](#)):

Let's see, UVB light increases serum vitamin D levels, which in turn influences gut bacterial diversity and composition. Wow,

Naveen Jain ([01:18:40](#)):

That's what I thought. Yeah.

Dave Asprey ([01:18:41](#)):

Okay, now there's two more things we got to get into in the time we have left here. There's a skin microbiome and it also affects your gut microbiome. And clearly being in the sun is going to affect your skin microbiome. How soon until we do our stand microbiome?

Naveen Jain ([01:19:00](#)):

So I think that's probably the next thing on our thing is because as we are starting to look at the gut microbiome, the oral microbiome and because we saw a lot of research on how oral microbiome actually causes you to develop cancer in your mouth, throat in your lung, and even by the way, colon cancer. So the number that if you look at the colon cancer, the reason colon cancer happens is an organism called Fusobacterium Nucle am, where it starts to produce some of the toxic transcripts like Fab two and FDA. Those are the thing that ends up causing the colon cancer. And Fusobacterium nucle AAM actually is an oral microbiome, right? So it is how your oral microbiome and sub causing your colon cancer in your colon. So that tells you how everything is interacting together because we swallow one and a half liter of saliva every single day, and that saliva contains all of the oral microbiome.

([01:19:52](#)):

So that means you are constantly interacting oral microbiome and your gut microbiome. So our next thing is very likely to be the skin microbiome and personalizing the skin cream, personalizing everything for you. So what we do at Biome is we analyze you and then we personalize it just for you. So whether it do use supplement, whether it do your gut bios, whether it's your oral loss and this whether it's a toothpaste, and now eventually you're going to start seeing the things like skin cream and other skin products that are going to be personalized based on your skin microbiome. Imagine doing a scalp microbiome because there is a microbiome on your scalp that could also help us personalize your shampoo and conditioner based on your scalp microbiome to get healthy hair.

Dave Asprey ([01:20:36](#)):

It's going to happen and I dunno if I hope you do it, but if you look at going back, wow, about the second biohacking conference, so this was 10 plus years ago, there was a company that was making a shampoo that wouldn't disrupt your hair microbiome. I don't think they're in business anymore, but this is the very cutting edge of longevity for your skin, inherit, you smell the right bacteria on there. And I don't know any company or private research or university research thing that has the dataset you have or the technology ability. So I think there's all kinds of things also like the nasal stuff and you're looking at what's going on in your sinuses. A lot of people have toxic mold end up getting antibiotic resistant bacteria in their sinus that makes LPS right next to the blood brain barrier. And I certainly had that.

([01:21:30](#)):

I had to treat it when I was exposed to toxic mold. So there's this whole world out there and it's invisible to us. It's invisible to a practitioner who can get a list of gut bacteria, but if you look at what they're doing and you have a million people, there's just this whole unfolding of new knowledge. So I am just always fascinated and amused when we get to go deep on this. I hope this was that for all of our listeners because end of the day, is there an argument for having the right toothpaste and the right bacteria in your mouth? Well, maybe there was wasn't, but I think you have enough data now to say yes, there's a case and it's not the same for everyone. So here's what to do for you. So I'm a fan of this approach. I want hyper personalized everything.

[\(01:22:18\)](#):

So Navin, thanks for making something cool and unique again and just keep doing what you're doing with I am, I'm fascinated and I'm honored to be an advisor and investor in your company. It's good. And you're going to give people a discount, right? Because I think, okay, so I always get you a discount whenever I can on stuff that I think is interesting. [viome.com/dave](http://viome.com/dave) and you're giving people \$110 off their whole body or full body intelligence test, which tells you all the stuff, which is super cool and that's a big savings. So it's [viome.com/dave](http://viome.com/dave). This is not an expensive test compared to most of the longevity tests. And you give the age, you give mitochondrial health, it's very well-rounded,

Naveen Jain ([01:23:04](#)):

But it's three tests has three tests, saliva, blood and stool. All of them with a discount would be \$289. Think about that. Three tests for 289

Dave Asprey ([01:23:11](#)):

Bucks. It's a very good deal. And I also, one of my comments here, I've had lots of people say, Dave, I have TMAO formers in my gut. If you don't care about that, you don't have to follow that part of it. So one of the things I'd like to be able to see in my VI is say, okay, this is something I want to work on. So for me, I'd work on oxalates before I'd work on TMAO because a lot of people just don't want to go six months without eating the food that makes 'em feel best. So at that point, I think there's additional learning for us to do about how do you more rapidly drop your TMAO forming bacteria. Again, this is all science, it's happening over time. Nian your challenges, make it so that I can eat what I want to eat despite my gut bacteria. So we just need

Naveen Jain ([01:23:58](#)):

Make it work for me.

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

Alright, thank you my friend and guys again, [volume.com/dave](http://volume.com/dave), if you want to work with Naveen and me on entrepreneurial stuff and with Vish, Ani from Mindvalley, just hit me up on Instagram. On the dms, we have a very exclusive, it's mostly, I don't say invite only, but you can apply. It's called the Apollo Group. Just say, Hey Dave, I want to talk to you about Apollo and I'll work that for you. And it's very fun to be able to spend two trips with Naveen and just really go deep on companies that are going to change the world. So that's a part of what we do to make the world better. But honestly, just looking at gut bacteria and fixing all that, I mean, this is big and it's only getting bigger.

Naveen Jain ([01:24:43](#)):

Dave, I want to thank you and want to thank the biohacking community for giving me a chance to actually learn all the things that we are learning today and giving back to the biohacking community with all the knowledge and everything we have learned. And the last thing I was going to mention was the fifth thing that we forgot in longevity was purpose. And what I can tell you is that people who live a life

of purpose tend to live 10 to 15 years longer than people with no purpose. So find something that you're willing to die for and then live every moment for it. So really do things that brings you joy and happiness. When you get up in the morning and you don't jump out of the bed, then the things you're working on is not your calling. So find something that really to jump out of the bed every single day and do that thing. And that is what's going to change the way humanity is going to live. And Dave, all I can tell you is that you do this every single day and my hat's up to you.

Dave Asprey ([01:25:38](#)):

Oh, thanks my friend. Guys, thank you for listening. And I think we've got pretty technical in this, a little bit of nerding out. And if you feel like this was over your head, here's what I'll do for you. We're going to take the transcript of this and I'm going to run it through chat GPT and ask for a real simple explanation of this. So when you get this transcript on the site and the notes for it, we'll come up with a bulleted list of the most important things for you here. It went over my head thing because this is technical, but this is important. This is how your body actually works and no one else has cracked the code this way. There are different codes to crack, but this is an important episode. And yeah, I am going to be using the new Viome toothpaste.