Caspar Szulc:

Every once in a while you meet someone that's a true visionary. And I don't mean someone that just talks a big game. They see the world differently and spend their time focusing on solutions to the tough problems in the world that most avoid. And they act on it. And if any field really needs visionaries, it's health and medicine, whether it's creating a company that sees living in a world where illness is optional and where nutrition and supplements are fully personalized to you or colonizing the moon today's guests dreams big and makes things happen. He's a serial entrepreneur with a serious track record, founding companies, such as Moon Express, Bluedot, TalentWise, Intelius and InfoSpace, and he's with us today to talk about why the future of medicine and health counter to what many believe is looking incredibly bright. This is a story of Viome with Naveen Jain.

Caspar Szulc:

Naveen thank you so much for being on the show. It's really awesome to have you on because I've been following your story and it's such an interesting one. And your motto is our only limit is our imagination, which is astounding now where along your wonderful life journey, did you have the inspiration to create Viome? Was that a sudden thing out of necessity, frustration, where did that come from?

Naveen Jain:

You know, like anything else in life, people, somehow think, this magical moment that happens where you suddenly become a different person. And I think what I find actually in reality, life is a continuum. This constantly building on top of each thing. So one previous thing leads you to something else, and then you eventually build on it. And as the saying goes, the last straw that breaks the camel's back. It's not the last straw. It is the cumulative stuff that really has happened all the way in the past. So I really think that every interaction we have with someone, everything we see in life, every time we think about a problem, every time we think about the frustration, they're all built on top of each other. And one day you wake up and say enough is enough, and go do something about it. Right? And I think, you know, and then most of the time we go back and rewrite the corporate history to come back with a movement that actually changed all that.

Naveen Jain:

But it's really really true. If you go back and look it's really true, because at last, a lot of these legends are actually made after the success happened, right?

Caspar Szulc:

Isn't it funny that most stories are kind of like a, it boils down to one thing they want, because that's what marketing wants. It makes it easier. But the story is usually a lifetime, if not numerous lifetimes of other people also, right. And it's like culmination that gets to there, but Viome really is a different company in many ways. Can you explain a little bit what made you get to that point where you said, all right, I really want to do this. I mean, microbiome has been something that's been growing in popularity. You could say genetic testing, but the way you went about it was really unique.

Naveen Jain:

So I think, I guess personally, let me just build a framework here because I really think that's going to help the people who are listening to it. So, you know, as you know, I was behind me, you can see all the stuff from the space here, all the astronauts, all the meteorites on the sites yet. But you know, I was finishing up this project on living on the moon and you know, it occurred to me that what should I do

next that could fundamentally change, improve the lives of billions of people on the planet Earth. And so I had this framework that I go through, anytime I start a company with a project, I saw, first thing you ask yourself is why this, why now and why me? And if you can go through that, it fundamentally changes. You know, you can apply that to almost anything.

Naveen Jain:

So why this, the number one thing you have to ask yourself is God forbid, I am actually successful in doing what I'm about to be doing. Is it going to really help a billion people live a better life? The answer to that is no. Then you really have to ask yourself that if you're going to be dedicating 10 years of your life to something in, you know, do you really want to dedicate your life to something that's not going to move the needle for many people, right? Because also, in my opinion, it's easier to start an audacious company than to start something small. You know because and the best and the brightest in the world want to work for something that actually is meaningful the best and the brightest want to work on the toughest problem. They want to work on something that will make them significant, that will make them, you know, create a, some type of their own legacy.

Naveen Jain:

Right? So if you have people who are just absolutely on the top of their game, what do they want? They want to create a legacy. They want to work on something that fundamentally changes things, right? So give them that type of an audacious idea. They're willing to come and join you on your mission. So that's the why this part. Why now is really something we all have to think about. Despite every one of us thinking that it is really my brilliant vision and you know, my team and you know, my institution, all that thing. And by there don't get me wrong, all that matters. But the number one determination of success is timing. Despite what anyone tells you, if your timing isn't on it, it doesn't matter how smart you are, how brilliant your idea is. Timing is really the most meaningful. So there had been lot of studies done.

Naveen Jain:

The number one determination of success is timing. Facebook wasn't the first social network we know there was Myspace before there was friends to the timing just happened to be right, and you can go to literally every one of the successful companies, it is about timing. So now what about the timing? And that's really not that I get you get lucky in timing. And that's what I think I want people to know. People think timing is luck, no timing is not luck. Timing is actually extremely determinable when it is the right time. So, you know, so in our case, when I started applying these things to wire, so I said God forbid our mission was very simple. The, what, if we could prevent and reverse chronic diseases. And the reason we picked on the chronic diseases, it is not something you're born with. It is not something that is you wake up in the morning and say, you know what, honey?

Naveen Jain:

I was out with the boys last night. I think I might've caught diabetes. You don't catch diabetes. It's not like you say, honey. I think I caught obesity last night. No, honey, you have been a fat for a very long time. So don't you worry about that. But the point is you don't catch autoimmune diseases. You don't catch these diseases. You develop these diseases over a long period of time. So in my opinion, this is the problem that is preventable and reversible. And I'm going to come back to it in a second here. Why, why all that happens? So in our case, we say, you know what, if we can solve this problem. And my first thing was, is it going to help a billion people live a better life? The answer was, yes. So my first check block

was done. Why this, why now? It was very interesting. I said, to solve this problem, there are three things need to happen.

Naveen Jain:

You have to be able to digitize the analog body. So our body is all analog, you know? And then you take this fluid from our analog body called saliva and blood and urine and stool. These are all analog. How do you convert them to, how can you digitize the human body? Because once you can digitize the human body, then you say, you know what, now I can do something else with it. So the first thing was is the timing now the right timing, the cost of digitizing the human body, the cost of sequencing can't be a thousand dollars. It can't even be a hundred dollars. It really needs to come down to $10 for this to be really massively successful. And four years ago when I started to see the trend, it was pretty obvious to me. It was on the exponential curve down. That means even though it was over a thousand dollars, I knew by the time we launch a product is going to get down to that box.

Naveen Jain:

So that was number one thing. The second part was once you digitize a human body, you're going to have this massive amount of data to process this data. A decade ago it would probably require, one of the fastest supercomputer to do that. And you have to save it. I said, I don't, I'm not going to have access to these faster supercomputer. Is there a processing power now that exists that's available to everyone, that you can go out and process a massive amount of data and the cost of processing has to be close to zero. And guess what, AWS, what is starting to come along and you start to see you can 5,000 course at AWS for the cost of couple of hundred bucks. And you can literally start to pocess massive amount of data. That was good. The third thing that needs to happen is now that you have all this massive amount of data that you can process, how do you decipher it?

Naveen Jain:

How do you make sense of all this data? That means the AI or the artificial intelligence has to be powerful enough to do that. So what is the cost of digitization? Is the cost of decoing low enough. And the cost of deciphering powerful enough for you to do that? And the answer to all three was timing is now, and that's the reason four years ago we said timing is now for me to do something about it. The third part is really the most interesting part, which is why me and now as I think you've pointed out. I it's the first thing I do before I start any companies, I am an information junkie. I know nothing about this problem. I am not a doctor. I'm not a physician. I don't even, I don't even recall my high school biology classes anymore, but point was, Hey, what if I could understand what is going on?

Naveen Jain:

Why do people have chronic diseases? And the, one of the things I learned is you never ever want to read one book on a subject, because if you read their book on a subject, the author's view becomes your view. What I do is I read 12 books on the subject and guess what happens? Now you have 12 different views of the problem. And guess what happened? You created the 13th view, which is your own by connecting all the dots. And that is the most meaningful information. The second part of this puzzle really is I started looking at all the research papers. So I'm like, you know, I probably have a thousand such papers. And the reason everyone who is starting an industry should do that is, that tells you what is the most cutting edge? Cutting edge is stuff that is starting to happen now is going to take 15, 20 years before it gets into the practice.

Naveen Jain:

But you want to see where the plans start. And it was pretty obvious. Four years ago, everyone was talking about this, something in the research, this microbiome thing, and people were talking about how microbiome is responsible for depression and anxiety and obesity and diabetes and autoimmune diseases and all the cancers and blah, blah, blah. And Alzheimer's starts in the gut and the Parkinson's. It starts with the gut. I have no idea. I'm thinking, Oh my God, there's something about this gut microbiome. That seems to be happening here. And then you suddenly have this Eureka moment. Oh, I think I found the problem. Guess what, that's the, you have the, Oh, shit moment. I think like, Oh, this can't be the problem there. As you mentioned, 10 companies who are doing the microbiome analysis and the problem doesn't seem to be solved, that means either you are a moron or the problem lies somewhere else.

Naveen Jain:

And this is the knot. So coming back to my third thing, why me? Is as an entrepreneur, it is not your job to have all the right answers. Your job is to ask the right questions. And this is the trick. What questions are you asking that is different from what everyone else is asking. And because of question you ask is the problem you solve. Right? So in this case, I realized that every single microbiome company was doing exactly the same thing. They were asking the question about what organisms exist in people's gut. And they thought if they knew what organisms exist in people´s gut, they'll be able to see what causes diabetes, what causes obesity. And in my mind, I don't know what these micro organisms are, but I thought, what if these micro organisms are like human beings. You could have thousands of different people with different names doing exactly the same thing.

Naveen Jain:

That causes the disease. So you can look at two people with diabetes with completely different organisms producing exactly the compound that causes the diabetes. What if that was true? And I thought, what if the same organism produces completely different in your gut? That is actually helpful. And in my ecosystem, being in this chaotic ecosystem produces something that is actually harmful. What if it's again like human beings? I am at work. I am an entrepreneur. I go home. I'm a dishwasher. What changed? Not me. The environment changed. And what if that's exactly what happens? So look at the things like acromancia, or C diff, C diff can actually produce butyrate in some people, or it could be actually infection and become pathological and become virulent and actually cause you to die. Right? So what is here? You have the same organisms doing completely different things.

Naveen Jain:

So I said, what if the problem doesn't lie in who is there? The problem really needs to be, what are they doing? And what if we can understand what is going on and what they're producing, what is being expressed is the only thing that matters. And by the way, the same thing I thought has to happen in the human side as well. So not just the gut microbiome on the host side, the human genes don't change. So you and I both know that if we do a DNA test today and then we gain 200 pounds, has our DNA changed? The answer is no, you become diabetic, has your DNA change no. And you can literally go through every disease you become depressed, your DNA didn't change. So if your DNA is not changing, how can it solution to, how can you identify the problem by looking at the DNA?

Naveen Jain:

Because it doesn't change when you get the disease or worse yet, then you have a disease that would into remission or relapse, like autoimmune diseases like IBD. Your DNA it's not like one day when you want to remission, your DNA changes. And one day when you had relapsed with the energy what's changing is the expression of the genes are constantly changing. And we, I thought, what if the gene expression is really the way to solve this problem? Not the looking at the gene themselves. That simple thing is that it's the expression that matters, not the genes themselves and believe it or not, it came from a really weird way of looking at this world because when you are naive and you don't have the idea of how to look at what these genes are, I thought, the genes are like thoughts in your mind. They could be good parts and they can be bad parts, right? But you can have all the bad parts in the world just don't express them.

Naveen Jain:

And there's no crime. You can think about it just don't do it. And you're totally fine. My point was, what are the genes that are like that? You can have good genes from the bad genes, as long as you can make sure the bad ones are not expressed, you're in good shit. And so I thought, what if the expression is really the key? And interestingly, if you look at the human body, Caspar, you know, 99% of all the genes that are expressed are not our own. So our human genes that we get from our mom and dad, they express give or take about 22,000 protein coding genes. And if you look at the microbes in our mouth and, and our gut and and other, other organs, they collectively produce somewhere between 2 million to 20 million genes. That means at best, we are approximately 1% human right.

Naveen Jain:

Now interestingly, you would think that it did control 99%. They would leave the 1% alone. It's like fine, whatever, but no, no, no, not them. They in fact control that 1% epigenetically. So the things that they release in our gut, it gets absorbed in the blood. Either it modulates our genes or it escalates our genes and increases the gene expression or suppresses the gene expression. So even there, they control everything that's expressed in the body. So one could argue that 99.9% is actually modifiable. And that's the point, forget about how. That means 0.1% is determined by how we are born. 99.9% is something you and I can control. So when someone tells you, your genes are your destiny and you have no control over your disease, you and I both know, unless people take responsibility for their own health, for their own action. It cannot ever happen that you cannot be sick.

Naveen Jain:

So sickness, that's why we ran. We started the company Caspar. We said, what while? Imagine living in a world where illness is optional, we didn't see, imagine a world where there is no illness. Because if we see that, what that tells you that we have a power to eliminate the illness, we didn't say that. We said, you have the power to make sure you don't get sick. That means our job is to educate you and tell you, what do you need to do? And you can say, you know what? Tough luck. I'm going to smoke. My answer is, great! enjoy your life.

Naveen Jain:

So what I'm trying to say is whether it is not people talk about like aging, right? And we'll get to it in a second here. Aging is a chronic disease by definition, you chronologically age, right? What if just like any other disease? What if we understood what causes us to age? And if 99, 99.9% of our genes are modifiable. Can't why can't we prevent aging? I mean, there is no, I'm not suggesting you don't that you live forever, but you can increase your health span, not necessarily your lifespan. And to me until you

die. There's no reason for you to have to suffer from a chronic disease. You may not be able to increase your lifespan, but healthspan is something you can absolutely do. And we know you and I both know people or hear about people who can be hundred years old and healthy as a horse. I don't know why they say that because a lot of horses are sick too.

Caspar Szulc:

So, it´s a weird saying right, healthy as a horse. May be back in the day horses were really, really healthy. I don't know.

Naveen Jain:

None of these things. Sometimes I wonder, like, you know, down by the door knob, like really? Why door knobs?

Caspar Szulc:

Door knobs these days are very sophisticated and have like AI technology. So yeah, another one.

Naveen Jain:

And people used to say like, you know, make it as simple as using a phone and today´s phone and you say, Oh, no it´s too complicated.

Caspar Szulc:

Really complicated is what they're saying. Right?

Caspar Szulc:

I mean, Naveen so much, so much of what you're saying makes sense to me. And I love it because I, myself am an outsider to the medical world who works in medicine. And you're an outsider to the medical world, also in doing this amazing stuff. And I agree. I give a talk on how we're asking the wrong questions in medicine. It's always, what do you have? And I'll just treat it. It's not, why do you have it? It's not empowering you to make your own decisions to help yourself like you are, but still you talk about timing. It's been a very long time. We've approached medicine this way. I'm not saying entrepreneurship or health or wellness. What is it that you feel in the medical field is holding people back from even embracing the Viome. Because I spoke with Momo and Guru and they said we were doing fantastic things.

Caspar Szulc:

That medicine hasn't caught up with us yet, somehow.

Naveen Jain:

And again, what people are going to think this is a very cynical way of looking at the world. But you know, if you look at it today, our medical industrial complex, everyone in the medical industrial complex makes money. When you and I are sick, no one makes money when we are healthy. Now I'm not suggesting they are bad people. I am not suggesting they're evil people. But the fact is the incentives are just misaligned. So imagine your doctor who may be the nicest human being. If let's just see him, all his patients never get sick. How is he going to feed his family, right? How the hospital is going to survive? How is the pharma companies look at the chronic diseases as a lifetime subscriber?

Caspar Szulc:

Right?

Naveen Jain:

Five year old person gets diabetes and they probably have button that says cha ching! Lifetime subscriber coming up, you got an auto immune disease. Oh my God, big cha ching!

Caspar Szulc:

Exactly, and you don't even know that you're paying for it because it's taking out of healthcare insurance. Right? So it's almost the best business model you have.

Caspar Szulc:

Yeah. Here's the worst part. They never want to cure a disease. They want to suppress the symptom. So now think about it, how we do it. Auto immune diseases, as opposed to trying to figure out, wait a second why is the immune system attacking our body? What is it? Something maybe a bacteria or virus that is mimicking the protein that is polenequivalent of something in our body. Shouldn't we be doing something there rather than what do they do? They give you the drug to do what? To suppress the immune system. Hold on for a second. Why did the nature have a immune system? If you're going to suppress it by suppressing the immune system, what happens now? Now you are open to all the interactions.

Caspar Szulc:

Yes.

Naveen Jain:

Right? And it is mind boggling. When you start to think about what happens now. So now you have these people who are constantly for the lifetime on this drug.

Naveen Jain:

Now they get more sick because now their immune system is weak, and guess what? Now they make even more money from them, right? So every corner, the disease, when they give you, give me the ill, I'll give you the pill. That pill is not benign. That pill one pill causes three more symptoms.

Caspar Szulc:

Sure.

Naveen Jain:

I don't know why magically they have pills for those three symptoms also. And by the way, most people's calls cost nine symptoms symptoms. They have four nine. And by the time you get to our age, you're popping more pills than blueberries. And that's a problem right there.

Caspar Szulc:

What is it? 12 I think now the average of the American we're taking?

Naveen Jain:

I mean, my point is that, so you asking me why? The idea really is that unless someone rethinks this idea of how we insent the medical industrial complex, these are going to continue to happen. But here's the trick we don't need to do that. It is us at the end of the day, you and I and millions of others. What if we can empower them to take control of their own health? What if we can make them the CEO of their own health? And here's a wonderful thing happened. And you know, anytime there's a disaster or devastation, there is a silver lining in the cloud. COVID, in my opinion COVID has done wonders for healthcare system. And here's why.

Caspar Szulc:

Yeah, please.

Naveen Jain:

It has, it has pushed the innovation, at least a decade ahead of where it would be like Tele health would not exist for a decade, but for COVID.

Naveen Jain:

And guess what? The biggest change I see now, it used to be when I, I used to say, you know what? I don't care. When I get sick, I'll go to the hospital and somebody will take care of me. But with COVID I'm thinking, wait a sec. I don't want to catch COVID, the last thing I want to do is to go to the hospital to die. Right? So what really happened is it is starting to bring the responsibility for our individual health on us. We say, I'm going to wear a mask. I am going to do the social distancing. I am going to do all of these things to protect myself. It is no longer let my doctor take care of me right now. Once you start to do that, guess what? You cannot buy the immune supplements today on Amazon. Everything is sold out. You can not make them fast enough.

Naveen Jain:

And what's going on. Individuals are starting to see, I got to take care of myself. I got to protect myself. And I think to me, guess what I love about you and what you do. You realized that a decade ago, your dad realized that decades ago, that guess what? There is a power to nature. The food is in medicine, and it's not like you and your dad were something you invented it. Hippocrates said 2,500 years ago, let food be thy medicine. You know, guess what? In India. And are you aware that they have been talking about that for five thousand years? Chinese medicine has been talking about 5,000 years. And we talk about this gut microbiome and fecal transplant is such a new thing in China they have been doing that for thousands of years. They used to call them yellow soup, right? Somebody got sick soo they gave them a yellow soup.

Naveen Jain:

Right? That was fecal matter. The point I'm trying to make is that at the end of the day, we are coming to a point where I believe in the next decade, Caspar, the individuals are going to start to take control of their health. And what is going to happen in the health care industry is what happened in every other industry, which is called consumer ideation of healthcare, that means no longer. I have travel agents booking my travel no longer. I have a stock broker buying your stock for me and no longer I'm going to have a primary care doctor telling me what to do or what, what might be happening. I go there today. I have a cough or I'm feeling cold. Oh, you might have a flu, but guess what? It's not a flu. Do you have COVID? You don't have COVID. Maybe you have a pneumonia. Oh, you have pneumonia.

Naveen Jain:

Sure. The point is they have no idea. And guess what's going to happen. Now we are going to have these at home tests, which are going to have all the information about us and no longer. I mean, today, obviously you get the at home test, you do the test and you're going to get analyzed. And you're going to get the information and AI is going to look at the thing it's going to tell you in the app, what is going on? And I tell you what we do at Viome later. But if you go back and look at, if you think about in the next decade, what's going to happen. Your vtoilets are going to be analyzing your stool, your urine every single day, your mirror is going to be analyzing your body. Every day. Your dials at home are going to be measuring your sweat, measuring your weight, your all the systems around you are going to be analyzing your voice to submit a set.

Naveen Jain:

I think guests from you might be depressed. Oh my God, look at guests, but he's walking slow. Maybe he's sick. Or look, when he woke up, it wasn't exactly the same weight he put on the first step. There's something wrong here. The way he's speaking is something is not right here. So my point is constantly being analyzed and looking at the stuff and telling you what to do. And that word would be real. You will become in control and it's not you versus the AI. It is you and AI working in conjunction together to make your life better. And a lot of people, somehow have this fear of artificial intelligence. Oh my God. Now guess what happens? The AI is no different than what we use today. So people were afraid of robots. People don't realize dishwasher is a robot, right? It does your dishes, your Google maps are your AI.

Naveen Jain:

In the beginning. People say, Oh, I know how to go there. I'm going to make a right turn. That's a quicker, short. And Google is telling me left, how dumb Google is? You go, right? You get stuck in the traffic. You say, Holy shit should have listened to Google. Next time when Google says turn left, you're saying whatever, dude, I'm turning left right? Point is suddenly the AI is no longer to control you, but to help you live better to tell you, Hey, you really enjoyed this restaurant. Here is another one to try. And you really love it. Next time you believe it. Right? And that to me is really what's going to happen is AI and humans are going to start to merge as an entity. That means I may not know a lot about a particular subject, but I'm going to trust my AI to be able to be my agent and guide me and recommend the things to me that I trust because it's a trusted AI that I believe is there to help me. And then we become this symbiotic relationship with AI.

Caspar Szulc:

You know, Naveen, I'm totally on board with you about being bullish and excited for what the next decade has to come, because you could look the stats. And I do this sometimes too, as to why our companies are so necessary. And you look at over 60 70, and I think it's now close to 80% of Americans are chronically ill, right? And we're going in this negative trend where it's younger and younger people are getting sicker and sicker. And so that could be a dreadful scenario that you get very fearful for. But I believe that brings up opportunities for entrepreneurs and disruptors. You, me, others. So many others out there doing brilliant work, helping to change that and really change the whole industry. But

Naveen Jain:

But before I let you go there, I'm going to tell you what is it I want people to know what you are working on, because I am super excited about the work you do.

Naveen Jain:

So before I tell you about what I do, I want people to hear from you about the work you are doing in this space to help people with chronic diseases and get to the root cause.

Caspar Szulc:

Yeah. Well thank you Naveen, for allowing me to do that, because I think we're on the same paths here and a lot, and we'll jump into the idea of personalization first off, and then the idea of using a more comprehensive approach that taps into a global system, and also looks at the past present and future to help the patient or the person dealing with any illness or even those that want to prevent illness in the future to address anything before it happens and address it at its root cause so that we can go back to self healing, not managing. So a big approach that I've grown up with my whole life, being around medicine, traveling the world with my father is really seeing what is out there in the world that can help anybody to reclaim their health.

Caspar Szulc:

So my father was an anesthesiologist, a surgeon. He became a, a larger chief of pain medicine, at large hospital, but incredibly frustrated with his results. He would stitch someone up. You would do things, you'd give them medications, they would get better. And a year later they'd be back worse. And he saw the revolving door and he said there has to be something better. So out of frustration, and necessity, he started to travel the world and wanted to see what else is out there that can help my patients to restore their health. I didn't get into medicine to give people crutches and just little patchwork. I want to see them actually better and live their whole lives healthy. As you mentioned earlier, too many of us get sick and just maintain for the last 30, 40 years of our life. So we're living longer, poor quality.

Caspar Szulc:

When in reality it should be, we should be disease free to the day we die at a hundred or so. And that's my goal. And that's what we're trying to do with Innovative Medicine is bring everyone to the table, conventional medicine, spiritual practitioners, cutting edge, AI technology, Viome, everyone to the table and say, what is best for the patient? Put the patient in the middle and then give them all the options working together. Leave egos aside in medicine. That's difficult, but bring everyone together and say, okay, you need some psycho-emotional therapies. Cause we're seeing that's real. You need some IV nutrition. You need personalized lifestyle changes, diet changes. You need some IV. This, that there's so many wonderful, wonderful things out there in the world spanning, you know, traditional Chinese medicine, Ayurveda, European biological medicine, Shamonic medicine out of South America, but to bring it together and then apply it in a very personalized way to each patient, we've seen that you could absolutely reverse these complex chronic conditions and you could get someone truly back to healthy, not managing their symptoms, not feeling 50, 60% back to a hundred percent.

Caspar Szulc:

And that's our goal is to keep looking out there in the world, keep searching, keep seeking how we can improve medicine in the results and turn the whole industry rather than managing of symptoms and disease to true health restoration. And, and that's what we've been doing. My father has been doing for over 30 years. We've been at this almost two decades now trying to teach doctors, trying to teach patients, reach more. People, help more people because without health, you know, without health, there is nothing. We are not functioning as a society. We are not productive. I mean, the health of us also is the health of this Earth, right? We are the microbiome in a sense of planet Earth. And so if we are

unhealthy, the Earth is unhealthy. So it's such a, an important thing. And it's something that I always seek out. These innovators, these other people doing in the same field, such as yourself.

Caspar Szulc:

And I get so excited because we're on the same path. So that's what Innovative Medicine is about. It's about changing medicine, curing the incurable and doing it in this really comprehensive, holistic and personalized manner. And I truly do believe this is where medicine has to go. And I think it's a great uphill battle. There's a lot of people stuck in an old paradigm of looking at things. But with the help of others, such as yourself and so many people now catching on, and I do agree COVID and others, as devastating as they've been silver linings, people are now saying, I need to prioritize my health. I'm not going to wait until I get unhealthy and then be susceptible to possibly being a casualty of this. I want to empower myself. And that's the beauty of this type of an approach. And using things like Viome and applying this type of medical approach, Innovative Medicine is it gives you your power back. And so that's why I'm so thrilled with things like Viome and others, because it's about empowering, right?

Naveen Jain:

First of all Caspar, my hats off to you for what you're doing, because this to me is the most innovation, the biggest innovation in the medical industry is, you know, as you mentioned, personalization and to me, I, the idea of people buying a generic food or generic healthcare or generic, anything is going to go away. So in my humble opinion, in the next 10 to 20 years, there is no longer people are going to have a, you know, Kellogg K sitting there and you pick up the box and come it's any company that's not personalizing is going to die. A slow death or a fast death, but they're going to die. Everything is going to be about me, whether it is a food being 3D printed for me, my water is personalized with my supplement, with my prebiotic, with my probiotics. My yogurt is personalized for me. Every single thing that I buy is going to be personalized for me. My clothes are going to be tailor made for me, whether the three D printed or not, right, I'll be able to get my clothes three D printed exactly to the thing that I need. And it's not going to be something, Oh my God, you've got a tailor made suit. Everybody's going to have a tailor suit.

Caspar Szulc:

Everyone is going to look really good.

Naveen Jain:

You know I think that is the key is going to be the personalization and to do personalization, you will need data. So I really think the biggest innovation in the healthcare is going to come, not from the healthcare industry, but it's going to come from the outsider who are bringing the ideas and the thing. So when people talk about thinking outside the box, it is not that it is thinking inside a different box, you know people like us are saying, wait a sec, this is not healthcare. This is a big data problem, right? Can I understand every biochemical activity that's happening in our body? So if I knew everything, every biochemistry of our body, and then I can apply AI I think it's just simply a math and a chemistry. What is the hard problem here?

Caspar Szulc:

Right?

Naveen Jain:

People say it's very complex. Yes. But complex for what, it's chemistry.

Naveen Jain:

If we know how our gut microbes transform any compound into any compound where the compound happens to be a food, or it can be a drug, it gets metabolized by our microbiome and it converts into a molecule based on its own. So basically think of our microbiome gut microbiome as a series of chemical reactions. And that's very predictable. So in a sense that now why is it that certain drugs have different side effects from different people is because those drugs get metabolized by different gut, different people in their gut very differently. In fact, here's a very interesting one that they did a drug called l-DOPA for Parkinson's and in some people that drug l-DOPA gets metabolized by gut microbiome, into compounds that actually has no effect on Parkinson's. That means the microbes are eating the drug. Think about that for a second microbes, eat the drug, and you can have all the drug in the world.

Naveen Jain:

It's not going to help anything. Now imagine if we can give them a right, IB, if we can give them a right supplement, a nutrient before they eat the l-DOPA because tyrosine tyrosine is a compound that's produced by the gut microbiome that actually metabolizes l-DOPA drug. What if we can absorb level tyrosine by something, some other nutrients, so you can take l-DOPA and now you can have the drug work. So literally not just even making the current drugs more effective, you can still personalize and make them make them individualized for each person. Same type of thing. What people don't realize is, you know, there is a massive amount of people who are taking these antiacid PPI drugs and $6 billion a year market. And I believe if you look at the use of PPI drugs and use of other chronic diseases, especially colorectal cancer and IBD and IBS, you starting to wonder, is there a connection here?

Naveen Jain:

And we were just analyzing the data. In fact, two weeks ago, we saw some very interesting stuff. The oral microbiome, there is a particular organism that is vastly present in almost every auto microbiome, but in the presence of that, when that microbiome doesn't get killed by the stomach acid, because you're taking PPI drug and starts to go into the gut that microbiome is now starting to cause the, you know, IBS, which is stomach pain, you know, all the things, you know, from IBS symptom or as the bacteria becomes more and more active, it causes IBD. And then eventually when it becomes really virulent, it becomes causing the colorectal cancer. Now, imagine now you can have the vaccines for just that. Now what if another thing that most people may not realize in the last 60 days, there are two research paper that came out.

Naveen Jain:

One was published in Nature, and one was in Cell and both of them showed that they looked at 20 different types of tumors in the body, you know, breast tumors. They looked at colorectal cancer and they looked at the lung cancer. They looked at the kidney cancer. They looked at the prostate cancer and they're starting to find that there is the unique microbiome inside the tumor. Think about that for a second. The microbes inside the tumor. Now it is not people say, Oh, how can that be? But what's really happening is as our gut becomes permeable our gut microbes. And when we have a leaky gut, that means inflamed gum, guess what's happening. Now, the oral microbiome is going into your blood and then, by the way, this is also one of the paper that we just published last week on aging. And one of the top predictor of aging was our immune cells T cells, the CD eight T cells.

Naveen Jain:

What we saw was as we age, our CD eight T cells are becoming less prolific and they're becoming exhausted. Now, there are a couple of reasons why that could be. What if it's happening because there is a low-grade, chronic bacterial and viral infection coming from our gut and mouth as we are inflamed happening, our immune system cannot deal with that because it's constant influx of this coming in. And then when immune system can deal with that, they go to the blood brain barrier, inflames that, and that becomes permeable. Now you have infection in the brain and the glial cells are actually releasing the amyloid beta, trying to contain the infection and it's causing the Alzheimer and dementia. And Parkinson's. So if we start to think about when the organisms are, their own immune system can deal with that, you get it, go into the lung and every other place.

Naveen Jain:

And now they form the symbiotic relationship with the local tissues there. And remember, these organisms are commensal. That means our immune system thinks they are good guys. They're part of us. So it doesn't attack them. So when they inside the cancer tumor cancer, you know, body basic immune system say out is one of us and let the cancer go. In one case in the pancreatic cancer, in mice, this professor at NYU thought wait a sec. There are all these organism inside this pancreatic tumor. What if I inject the antibiotics directly into the tumor, it killed the bacteria. Guess what happened within days, the immune system kill the cancer. So basically the organisms were protecting the cancer. So imagine now, sooner or later, we will be able to in fact, come up with a unique vaccine for each cancer, because the unique microbiome for every, every tumor that is protecting that tumor because different microbes go to different organs where they actually formed a symbiotic relationship.

Naveen Jain:

So you could have a vaccine for colorectal cancer vaccine for pancreatic cancer, a vaccine for these. And ultimately what if we can, before we even go there, what if we can strengthen our gut lining to begin with strengthen our oral hygiene? So there is never the leakage. So there is you can prevent it from happening, but people who have already gone down that path, they can have a vaccine to reverse. It all would be that our children and grandchildren never, ever have cancer. So in my opinion, in a decade or so, our grandkids are gonna look at you, see grandpa in your days people were dying from these diseases. You mean, people just didn't know what to do. You mean they just lost their memory and you thought it was okay. And people just had cancer and we give them the red poison and thought some magical thing was going to happen? What kind of people were you guys thinking about? People used to put leeches on them. It's like, Oh my God, how gruesome. But that's what we do. When we put a red poison, our body is no worse than putting a leech on our body.

Caspar Szulc:

Let´s say leeches are actually probably more helpful than rat poison. You know, the rat poison is really deadly, leeches okay. You know, you can still get through that. And there's some purpose of it too, but you're making so much sense here in that I find that the research is catching up to a lot of what we knew and probably understood. And we will look back one day and I don't know if we'll call it barbaric, but we'll say, Oh man, like you said, in a few generations, you used to do that really and used to have these problems. And I agree that something that we've seen at the center a lot that goes completely unnoticed beyond the microbiome and dysbiosis in the gut is also localized infections in the gums or the teeth that constantly create a little bit of inflammation. Immune system is off. Then the gut goes off one

or the other, and then you have a host of chronic diseases. And until you address that, you will always have it no matter what you do. It's wonderful to see that.

Naveen Jain:

So bringing it back, Caspar, here's what we are doing at Viome now. We help you analyze what is happening inside your gut. Again, remember going back to, we look at every gene expression that means we buy. So the two tests we do now, one is called gut intelligence tests. One is called health intelligence, test. Gut intelligence test looks at all the microbial activities in your gut. What I mean by that is we look at not what organisms are there, but are they producing LPs? That is harmful. Are they producing too much sulfide? And if they're producing too much sulfide, we tell you don't eat broccoli or cabbage because they have very high amount of sulfate. That's going to cause you more inflammation. Now, if you see that, Hey, your microbes are producing lots of ammonia. And we see the reason they're producing.

Naveen Jain:

A lot of ammonia is because fermenting the protein. Now we have to go back and say, you need to eat the digestive enzyme with your protein or start to cut down the protein or else. You're going to continue to have inflammation in the gut. So we analyze everything that's happening in the gut. Tell you what foods you should eat and why, especially for you. Why is it that food is good for you avoid this food? And we tell you why. So it says, don't eat tomato because you have it tomato virus in your gut. Don't do that, but you do need licopene. So we're going to give you the licopene as a, as a supplement, but you don't need to eat tomato for that because tomato is going to cause you harm. So that's a gut intelligence test. It is a test that measures all the gut stuff and tells you what food you need to eat and why, what food you need to avoid and why, and the supplements that you need. Every single ingredient, every probiotic, every prebiotic, every food extract, vitamin mineral herbs. And guess what, in a precise doses for you. And this is the first time in the human history where we are able to produce each capsule for each individual on demand right after the test.

Caspar Szulc:

That's an incredible feat. I have to say Naveen because I know about supplement production. And a lot of what we do here at the center is, is trying to be as specific, but finding the products that are closest, but you're going further and actually making the product for the person, which is even a level above that.

Naveen Jain:

And nothing that you don't need. The beauty of the thing is everything you need and nothing that you don't need, because what happens is every time you give something that today, the supplement or probiotic market is more of more things. And I think it's, Oh, you got 10 students. I got 15 students you've got 400, I got 500.

Caspar Szulc:

Yeah. It's really becoming who has the most right? It's billions and trillions. Yeah. It´s too much.

Naveen Jain:

And answers. You need, you need one strain and guess what? Other 14 are going to harm you. So we only give you one, if you need seven, we give you seven.

Caspar Szulc:

Right.

Naveen Jain:

Then we have the have health intelligence test that not only looks at the gut includes the gut intelligence test, but then it also looks at your blood, your host side, all of your cellular health, your mitochondrial health, immune health. That means all the cytokine markers. We're looking at all the, your stress response health. You obviously you've gut health and your biological age. So we can tell you that you may be chronologically 48. Are you biologically 31 or 61 right?

Caspar Szulc:

A lot are 61 I think.

Naveen Jain:

interestingly, it's a magical number. I am. I just turned 61 and I'm my biological age is 49. Right?

Caspar Szulc:

Thats´s wonferful.

Naveen Jain:

So, so far that's really good. Right?

Caspar Szulc:

Happy 49.

Naveen Jain:

And my hope is by the time I turned 70, I can reduce my biological age down to 39.

Caspar Szulc:

Split it in half, go 35. I say, I think, you can do it.

Naveen Jain:

There you go. But my point I'm trying to make is to anyway. So we do gut intelligence, health intelligence, and both cases. We give you the recommendations. The, you know, the interesting thing about how health intelligence is we now know more about you. That means our recommendations are even more personalized and precise for you because now we know exactly what the cytokines, what the inflammation in your body is. And by the way, all inflammation is not the same. So when people say, Oh, I've got inflammation, I just need to take anti-inflammatory drugs. Guess what? You need to know. What is causing that inflammation? Is it because of histamine pathways we look at the histamine pathway. Oh really? You have some environmental allergies or food allergies. We need to take care of that versus, Oh, your inflammation is being caused by oxidative stress. And we need to take care of that.Or yYour inflammation is being caused by the viral infection left. We'll take care of that or bacterial infection or by the way, it is coming from gut. That means gut is releasing a lot of LPs and ammonia that is causing the

inflammation. So unless you know that what's the reason you cannot fix the inflammation. It's not like let's just suppress the immune system,

Caspar Szulc:

Right? So it's personalized nutrition meets personalized supplementation. Now let me ask you really quickly because I've done. I've, I've done feasibility studies with, with nutrition and all these things that we created our own supplement Nadovim with NAD that took two years to make, and that's not personalized. It's just the best quality you could find, trying to find the right synergies for the most amount of people.

Naveen Jain:

But NAD. You mentioned NAD. Let me just tell you something about NAD Caspar. Most people think NAD helps them live longer. What we saw was in fact, NAD can be very harmful to you when you have a high cellular senescence or you have high oxidative stress. That's the last thing you want is NAD.

Caspar Szulc:

Well, yeah, it, it energizes. So a lot of patients that have are on a lot of prescription drugs, it's actually not good. It's pushing too much of that toxicity and other things there. The oxidative stress is already too high. So yes, this is truthful that you have to be cognizant of who you are when you take it. Absolutely. Yeah.

Naveen Jain:

Okay. And by the way, we look at the cellular senesence, we look at oxidative stress. So we said, no, no, no, no, no, don't take NAD. It's not going to be good for you. Or do you really need it because you don't want to be increasing the mitochondrial biogenesis or oxidative stress.

Caspar Szulc:

Yes, yes. That is true and then some are there, others are not, but that's very dependent. And that's why I love what you're doing because it's not a one size fits all. It's not a, Oh, you are this. Then do this. It's who are you truly? And let's personalize it. And going back to my question, how difficult was that to get to this level where you have now the personalized supplementation, you just unveiled that what a month or so ago about yeah. I mean an amazing feat. What kind of challenge was that? Was that just an incredible one or did it just happen somehow?

Naveen Jain:

So interestingly, our underlying technology for Viome came out of Los Alamos national laboratory here. It was developed, it took them 10 years, some of the brightest minds, and it was a department of defense that God knows untold amount of money that went into it. And some of the brightest minds sitting inside the world that means they can't be seen working on something like this. And we were fortunate enough to get the exclusive license for the technology to build Viome. So this is not something, any one of us, any private company could have ever done there's no mount of money to find those brilliant brains and 10 years to work on this problem to solve this. So that will, we're very fortunate. And that's the reason we are so far ahead that no one has ever figured out how to do the RNA analysis of gene expression, not a single company in the world.

Naveen Jain:

We are the only company that does that. And the second part is the robotics are challenging. I mean, now imagine we have 250 ingredients that we determine which 30, 40, 50 you need depending. So that means, and we say, you need 11 milligrams from that one 12 milligram from that seven milligram from that all have to come in at precise dosage. And then they all have to go into these capsules and they all get packaged on that day. And we see manufactured on, right? And it's made for you every month. So every month, if something changes about you, we adjust your supplement and then we retest you. So the beauty of the thing is so far, the supplements have been done on fate. I think when I take vitamin C and vitamin D. I'm helping myself. How do you know that? I read something that I, read NAD helps me. I read that this helps me.

Naveen Jain:

You don't know that. Is it going to work for you or not. In our case, before we cut, we measure that means we look at all your health markers and say, here is where things are. Then we see here's what you need. And guess what? And then we retest you to say oh look, all these changed now. So measure nourish, improve. And unless you can show people that everything they're doing is actually helping their underlying health markers to not only, you know, you have more energy, you're sleeping better, you're losing weight. You have better digestion bloating in the stomach. All that is great, but you want to be able to show people that even like inflammation, how do you feel inflammation? Unless it's really bad, you say, Oh yeah, markers is the only way. Otherwise, the only time you see inflammation is you got some serious disease. Like my joints hurt.

Caspar Szulc:

And that's really awesome because I do believe a lot of times what companies like to do is only focus on some sort of evidence or something like that and prove that. But you're also saying experiences is worthy. Also. We all say that in medicine, I could show you markers are going well, but if you feel like crap, then you know, it's probably not the best result for you. But if I could match your experience of feeling very well to the evidence that shows the markers have reduced or improved, that's the holy union that we should be aiming for and you're doing that with personalized kind of nutrition with the supplementation, which is amazing because again, it empowers and it's showing both sides of the coin, not just one or the other. Yeah,

Naveen Jain:

Well, Caspar, I'm so glad that you know, someone like you in this world exists that is actually is dedicating their life to making people feel better rather than simply giving them suppressing their symptoms, that they keep coming back to you. So my hats off to your dad and you for building this business, finding the best and the best technologies and the best things that are out all over the world, because you know, these cultures were, you know, being around for thousands of years, they have learned a lot through trial and error. And these, you know, old Chinese medicine, the Indian medicine all over the world in Africa. I mean, these guys have been doing this for long time, they don't have a clinic that cuts you open and they got drugs for headache. They give

Naveen Jain:

Them the natural medicine. So my point is, I'm so glad someone like you is doing it. And I'm so glad you believe in this personalization. And I'm glad to be a part of your journey, part of your mission. And I'm so glad that you're part of our mission and what we're doing together. Hopefully everyone listening to it is

going to go sign up for Viome and actually come to your clinic and essentially get this personalized care that they deserve.

Caspar Szulc:

Absolutely. I mean, the feeling is mutual. I think we are on the same paths and, and doing this thing that is pushing the envelope of what is possible these days in medicine and health and wellness, longevity, all these so important things really. I can't think of much more, anything else that is much more important than health longevity. You know, how we feel as a society coming together in a healthy way.

Caspar Szulc:

And speaking of pushing the envelope and pushing the boundaries, I know one of your goals is to go to the moon and how, how is that coming along for you? Because, and tell me if you've ever seen the movie Moon with Sam Rockwell. Cause I found that to be fascinating and I kind of want to go to the moon now too, but how is your quest to go to the moon?

Naveen Jain:

Well, the point is it is going to happen, but you know, whether we do it or someone else does it, there's no doubt that in the next decade or so, we will be starting to live on the moon. And in the next 20 years, we are going to have a child born on the moon and they are going to look back up and they're going to say, we come from that planet, right?

Caspar Szulc:

I mean, you called it the eighth continent today in your Instagram post. I saw right. That, that will be awesome. Adding a new continent at some point.

Naveen Jain:

It's going to be no different than people living in Sydney. And it's going to take no longer than going on here to the moon. One day, then it's going to Sydney. You're going to be connected instead of internet, you might have an intergalactic net.

Caspar Szulc:

This is amazing talk for me as a traveler. And I've done that Sydney flight and it does feel like you're going to another planet. I can't wait. And I so applaud you for these what some people would say audacious goals, but I just think you're, you're, you're a great dreamer. And then do you, you don't believe in those limitations. And I have to say that kind of approach should be what we take towards medicine and health.

Caspar Szulc:

There aren't limitations, your body isn't limited to be sick. It has the power and is limitless to do whatever you can think. So I think that's a wonderful note to close this off on for everyone and feel uplifted that if we could go to the moon, which we will, we can heal ourselves from anything out there. So Naveen, thank you so much for coming on. This has been wonderful, uplifting. I want everyone to go to Viome. Everyone do this because this is the right step to take in control of your health and preventing disease in the long run. So thank you so much.

Naveen Jain:

Thank you. Caspar, look forward to working with you.

Caspar Szulc:

If you're one of those people that are looking at the statistics of chronic disease or even suffering from poor health yourself, I hope this podcast gave you hope about the future.

Caspar Szulc:

There are plenty of remarkable people that aren't just thinking out of the box to help heal others, but literally creating a whole new box and paradigm to solve our complex health problems. The idea of personalization Viome embraces is truly the future of health. And I hope it not only opens the doors for others to follow suit, but also gets people to think differently about their role in maintaining health and reversing disease, taking complete responsibility for your health. That is a tough pill to swallow. And I've seen this my whole life within the integrative medical field where drugs aren't used to mask symptoms, but the responsibility really is on you. It is that much easier though, with the tools and services such as Viome and help you in the end. It's how we use these wonderful tools, whether they be Viome, Innovative Medicine or the hundreds of other groundbreaking companies, looking to empower the people to live their healthiest lives, that determine if we stay healthy or become sick. I hope you feel empowered, inspired after listening to Naveen and share this with others that are hoping to feel the same way. The future is indeed bright. And I hope the story, you can write, be one full of health, happiness, and abundance.